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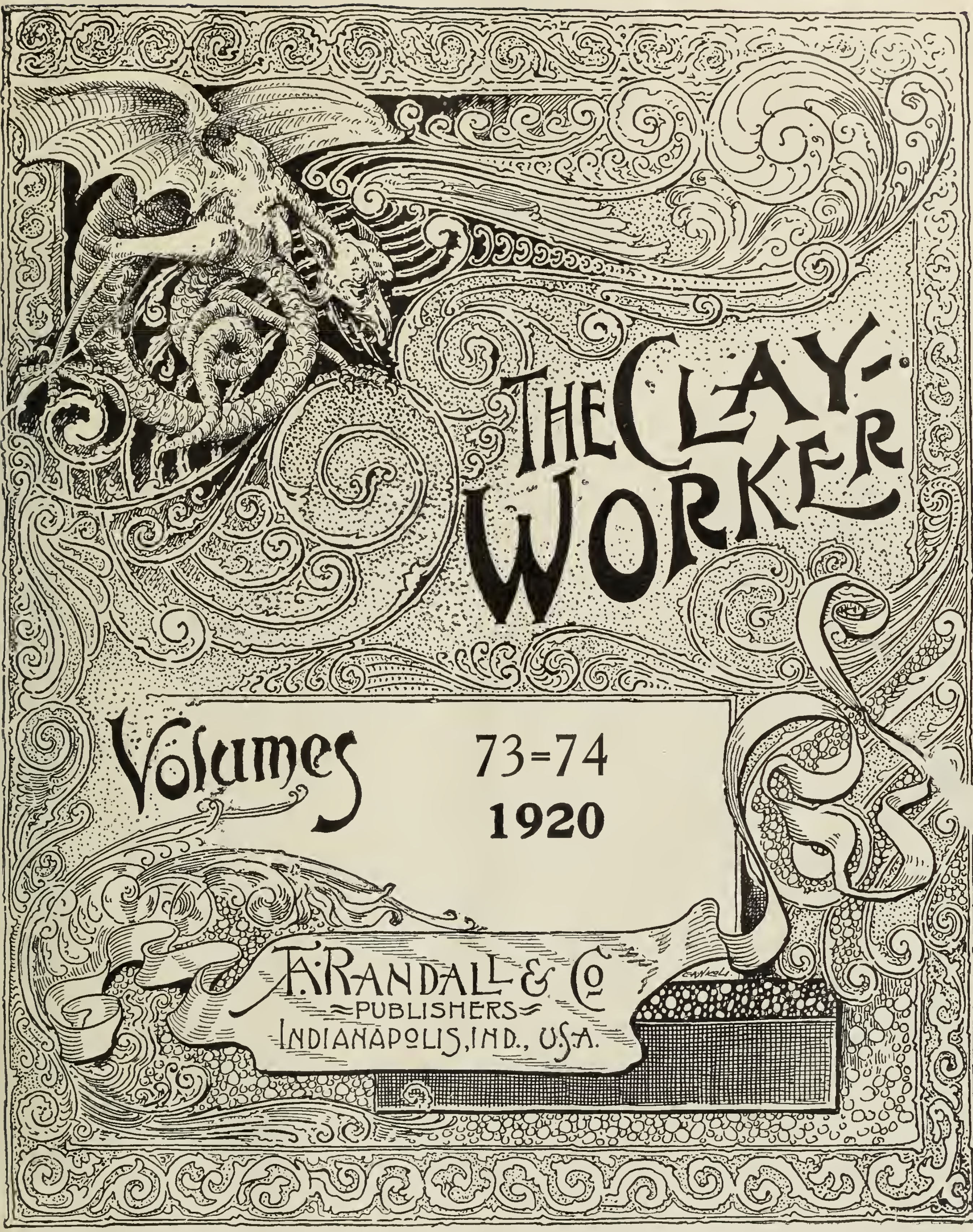

THE CLAY-WORKER

Volumes 73=74

1920

T. A. RANDALL & Co
PUBLISHERS
INDIANAPOLIS, IND., U.S.A.

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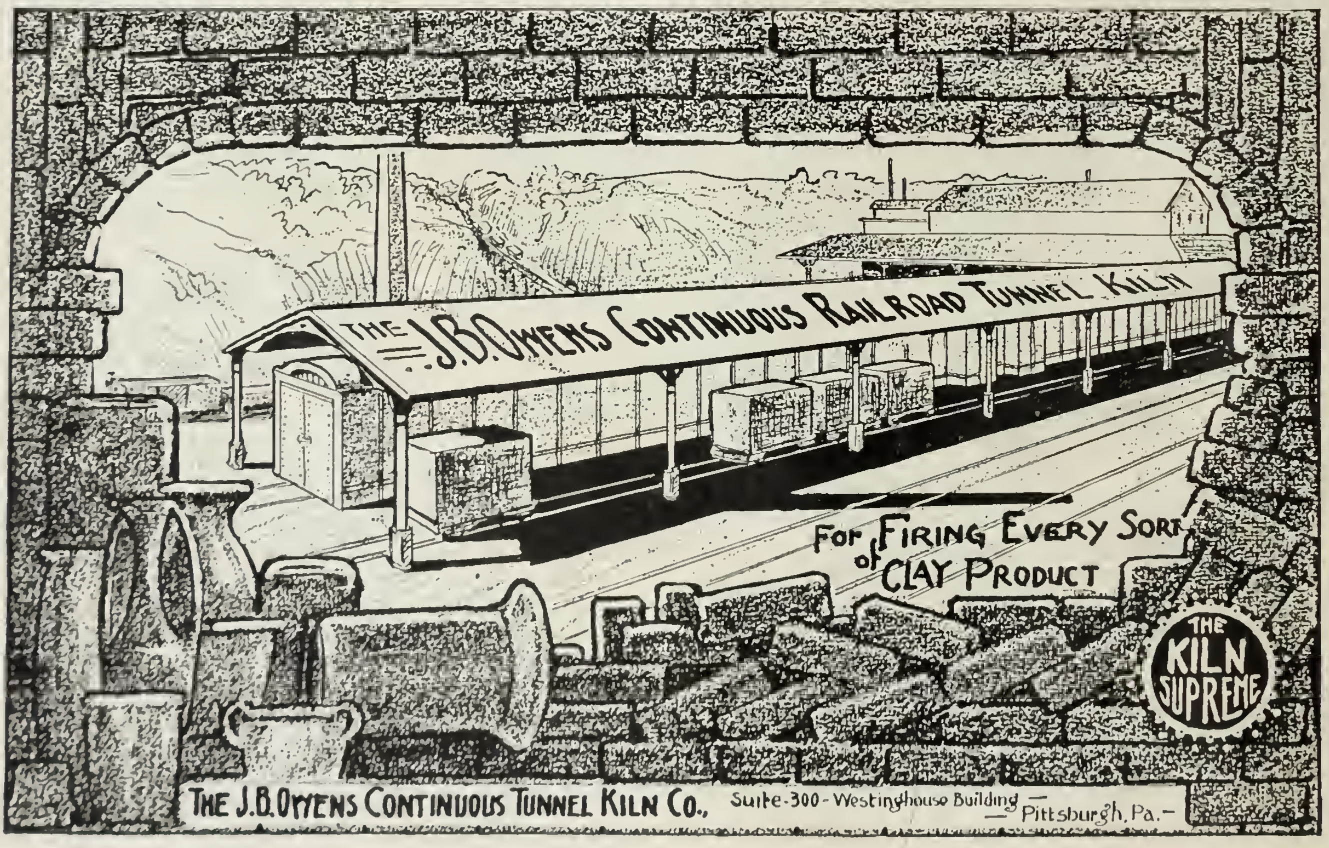
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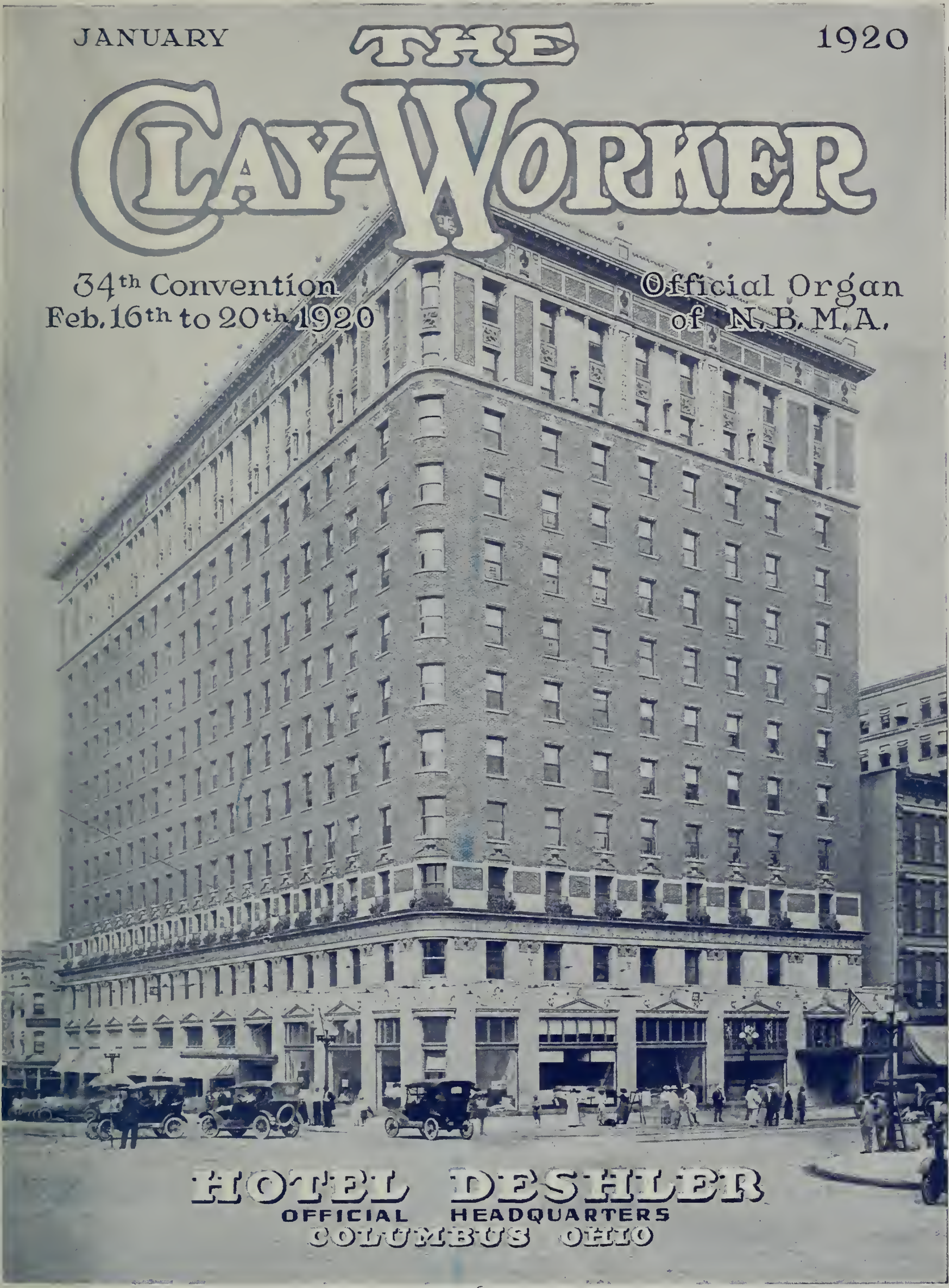

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OFFICIAL HEADQUARTERS
COLUMBUS OHIO

Published monthly. Subscription price, $2.00 per year. Entered as second class matter, January, 1884, at the post office at Indianapolis, under the act of March 3, 1879. Title registered and contents Copyrighted by T. A. Randall & Co., 1919.

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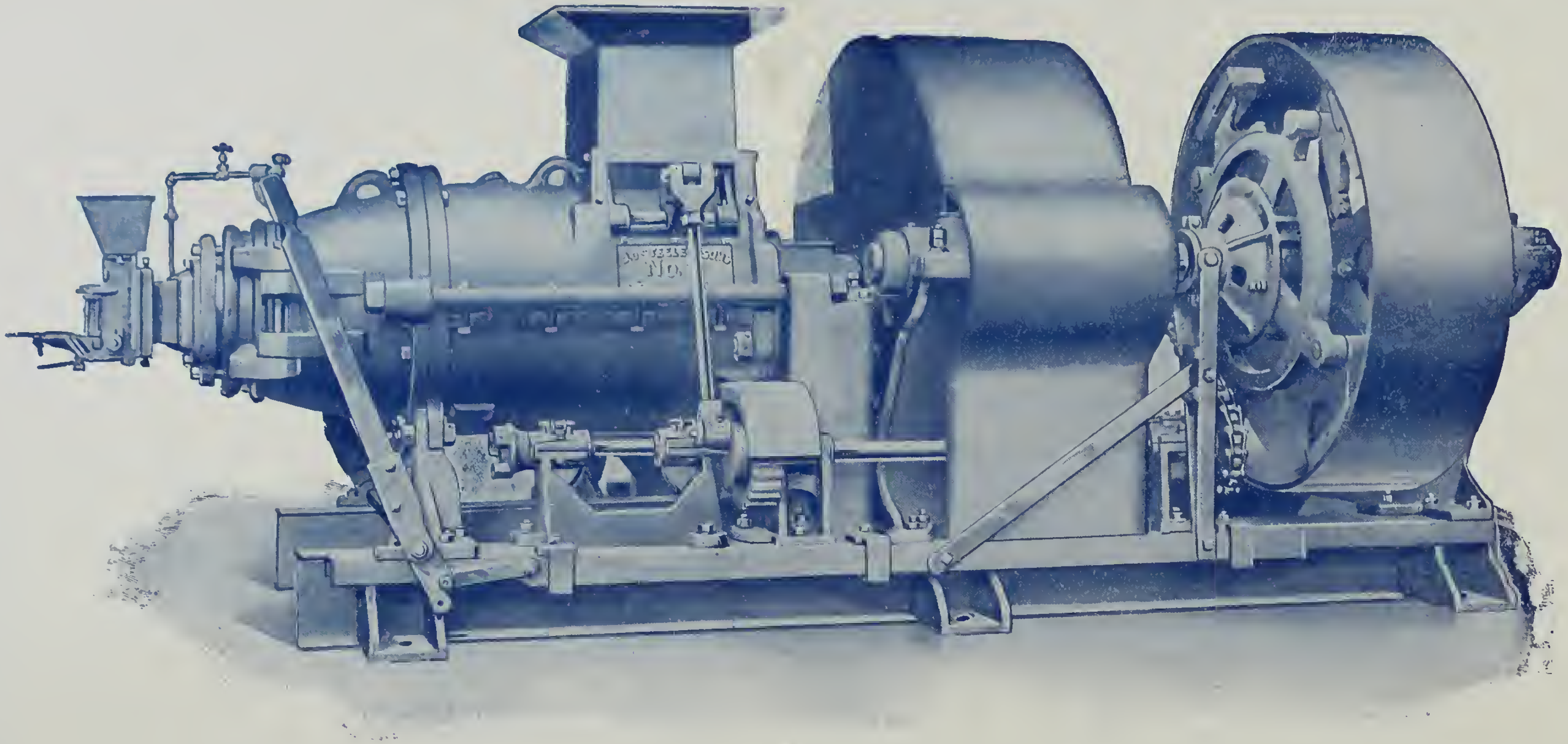

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THE CLAY-WORKER

THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 73. INDIANAPOLIS, JANUARY 1920. No. 1

THE 1920 N.B.M.A. CONVENTION CITY: Points of Interest In and About Ohio's Capital City, of Particular Interest To Clayworkers, Who Will Gather There At the Thirty-Fourth Annual Convention of The National Association and Affiliated Organizations, Feburary 16 to 21, 1920.

COLUMBUS, OHIO, which will entertain the 1920 Convention of the National Brick Manufacturers' Association, holds the record for being the greatest convention city in the United States. In proportion to its size; more conventions meet in Ohio's capital city every year than in New York, Chicago, Washington or any other of the larger cities of the country. Not only does it rank highest in proportion, but some years actually entertains more conventions than the larger cities. Because of its record, Columbus is known thruout the country as the "Convention City." In addition to being the capital of Ohio and the home of Ohio State University and many fine state institutions, Columbus has a population of 225,000 and is a railroad and manufacturing center of note. Twenty-seven steam and electric railroads enter the city from four directions, making it easy of access to visitors and an ideal location for shippers of merchandise, as all parts of the country can be reached in a short time.

The Buckeye Capitol, President McKinley's Monument in the Foreground.

There are 544 manufacturing establishments in the city, turning out almost every essential from hoisting and mining machinery to needles and pins. These 544 establishments employ 48,220 people and have an annual payroll of more than $50,000,000. The city has fourteen clearing house banks, with assets of $78,000,000, and twenty-two building and loan associations with assets totaling more than $45,000,000.

Columbus has 185 churches, 6 theaters, 59 hotels, 9 hospitals, five big convention halls, seven great state instutions, including the State House; 290 acres of public parks, 328 miles of paved streets, 386 miles of sewers, 7 public libraries, and is located on 14,563 acres of land at the junction of the Olentangy and Scioto Rivers, two of the most beautiful and historical rivers in the country.

The city is on the edge of the greatest soft coal fields in the world and is in the heart of the greatest manufacturing and agricultural state in the Union. Because it is located geographically approximately in the center of population, and because of its unusual railroad facilities, over-night shipments from Columbus reach St. Louis, Chicago, Philadelphia, Baltimore, New York, Nashville, Chattanooga, Detroit, Buffalo and intermediate points the next morning. From a geographical standpoint, Columbus is located so favorably that raw materials for any kind of manufacturing are accessible; the city is practically in the center of all manufacturing in the United States.

Home of
Council No. 400
Knights of
Columbus

The B. P. O. Elks'
Club House
On East Broad Street
A Classic
In Modern Club
Architecture

The products of Columbus are shipped all over the world. Eight of the factories in Columbus are among the largest of their kind in the world. The mining and conveying machinery, steel freight cars, car couplers, contractors' equipment, couches, glassware, regalia, floor and wall tile, medicines, paints and varnishes, artificial teeth, pianos, fire fighting apparatus, farm equipment and machinery, bolts, chains, pumps and machine products purchased in Columbus are known the world over.

Bank clearing for the past five years shows the city is one of the fastest growing municipalities in the country, financially. The average weekly clearings are now more than $11,000,000.

Columbus schools rank with the finest in the country.

The city possesses a magnificent Athletic Club, a beautiful Elks Home, a splendid Masonic Temple, two beautiful country clubs with fine golf courses, and many other well-appointed public and private buildings.

Columbus is the center of official and social life in Ohio. Official business brings the big business and professional men to it the year round. This means round upon round of social functions, the brilliancy of which are not outdone any place else in the country. The city boasts of a dozen clubs of the highest standing.

COLUMBUS CENTER OF CLAY INDUSTRY.

Columbus is located in the midst of the greatest clayworking section of the country. Ohio is noted for its superior brick, tile and pottery. Its soil produces unequaled clay for the manufacture of these articles.

The pottery business flourishes up and down the Ohio River. East Liverpool, Ohio, being the greatest pottery center in the country. Zanesville and other Ohio cities rank close to East Liverpool. At Cincinnati some of the finest and most expensive pottery manufactured is produced at the famous Rookwood studios.

CONVENTION HEADQUARTERS.

Headquarters for the 1920 Convention will be at the Hotel Deshler, one of the finest hotels between New York and Chicago.

The Deshler, completed in 1917 at a cost exceeding $2,000,000, is a first-class hotel in every respect, and contains everything for the comfort and convenience of guests. The entire second floor of this hotel is so arranged that it can be used as one harmonious whole in entertainment of conventions. Its auditorium has a seating capacity of 1,200.

Skyline of the Convention City in the Center of Which Is the Deshler Hotel.

The Hotel Deshler is located at the corner of Broad and High Streets, the geological and business center of the city, and is directly across from the State Capitol Building. All points of interest can be reached from the Deshler in a few minutes' ride. The hotel is just six blocks from the Union Station, and a like distance from the other important railroad and traction stations.

"There is a reason" why Columbus entertains so many thousands of visitors each year.

Columbus is located, geographically, approximately in the center of population of the United States.

Columbus has twenty-seven steam and electric railroads entering it, making ingress and egress simple.

Columbus has good weather most of the year and knows little of the extreme heat or cold.

Columbus has 59 hotels, including a suitable number of first-class establishments to care for the biggest crowds.

Columbus has five large auditoriums or "convention halls."

Columbus has ample amusement in the form of six first-class theaters, fifty-four motion picture theaters; two large amusement parks, baseball park seating 14,000; athletic fields, state fair grounds costing more than $2,000,000; golf links and numerous other amusements where there is "always something doing."

Columbus has the best street car service in the world, with eight tickets and universal transfers for a quarter and rapid and frequent service.

Columbus has a pure water supply second to none.

Columbus is filled with and surrounded by many things of historical, educational and special interest; it has miles of paved streets containing beautiful residences and many well-kept and beautiful state institutions, including Ohio State University, which has the largest and most beautiful campus and handsomest college building in the United States.

Columbus is not "too large" and not "too small;" it is just right for conventions of any size or kind.

Columbus boasts of one of the largest and finest convention halls in existence. It is the auditorium at the State Fair Grounds.

The auditorium contains a vast arena and seats more than 6,000 people. It was built at a cost of more than $200,000 and is large enough to easily house the largest circus.

KNOW YOURSELF.

For several years now we have been preaching the doctrine of getting acquainted with the other fellow because you may like him and intend to help both you and him in future business. This doctrine still stands, but now we want to supplement it with the slogan "Know Yourself." In a word, get acquainted with yourself as well as the other fellow, to the end that you may know yourself as well as the other fellow knows you. It helps to get the other fellow's viewpoint on yourself now and then, for the more you know about your capacity, your weak points, and your natural gifts, the better shape you will be in to bolster up the weak points and to make the most of your good talents. So put in part of the time the present year making a study of yourself from different angles and viewpoints with the idea in view of becoming better acquainted with yourself. True self confidence, the kind that leads to accomplishment, should have for its foundation as thorough a practical knowledge of one's self as possible.

Masonic Temple—The Largest Building in the State Devoted Exclusively to Masonry.

THE LESSON OF BETTER ACCOUNTING.

One of the good lessons the industries has learned by stress of circumstances in the past year is that of better accounting. Some have taken to the matter reluctantly in the past, but undoubtedly the trade as a whole has profited from the necessity of more accurate and positive detailed accounting of the business. The lesson of better accounting has brought with it a better realization of what it actually costs to make brick and other clay products. Out of this has come a demand for better prices so the business may show a proper net profit. If this lesson is taken to heart as it should be, and promises to be right now, the future of the industry should be freer from ruinous competition and furnish a safer investment for capital and a surer profit for those who put their time and money into clayworking.

Hotel Deshler

'The Convention Hotel"

Columbus, Ohio.

IN its lobby, which is patterned after a great London club, the Deshler is typical of the comfort and luxurious appointment found throughout.

Just off this spacious gathering place, to the left, is the sparkling Crystal Room. Here you will find a tempting evening dinner for $1.50 the person.

At the opposite side is the Men's Cafe, a convivial Lounge, where refreshments or a la Carte service may always be had.

In the Ionian Room is a daily business luncheon with music for 65c, and dancing each evening.

Every facility of this excellent hotel will be devoted to the service and entertainment of N. B. M. A. members attending the Convention held in Columbus and the Deshler, February 16th to 20th, 1920.

Headquarters
1920 Convention
N. B. M. A.

HOTEL DESHLER is splendidly equipped with private dining room, convention halls and adjacent committee rooms to serve the needs of any sized group of business guests.

Those who make the Deshler their convention headquarters will find in their bed rooms unusual features of convenience. The private baths are of strikingly beautiful finish; each room has circulating ice-water, bed-head reading lamps, full length mirrors, and thoughtful, unobtrusive service that anticipates every want.

Write at once for RESERVATIONS Convention week, February 16 to 20, 1920, stating date of intended arrival, character and number of rooms desire. Hotel Deshler, Columbus, Ohio.

Written for The Clay-Worker.

BUTTON HOLE TALKS.

Gates Mingles with the Gay and Festive Throng and Reminiscenes Thereon.

IT ISN'T REALLY necessary to be a dancer to enjoy yourself at a dinner dance. Just watching the crowd and studying human nature will sufficiently occupy your time and give you recreation. Study the anxious look on the faces of the elderly gents, who, with their arms full of lingerie, and a sad fixed, frozen smile on their faces, and desperately and despondingly trying to keep their feet under them and moving, and at the same time off of the feet of the other participants. Glimpse the haughty expression of the ancient dames as they glare at their more youthful and more popular girlish rivals. And then the chair warmers, male and female, give abundant opportunity for facial study.

W. D. Gates.

On the particular occasion in mind, the music pulsed and throbbed, while dainty feet kept tripping time. Satin slippers, high as to heel and pointed as to toe, made it largely toe dancing.

The floor was crowded with dancers, the lights were high and the bodices low. Gowns so arranged below as to give enticing glimpses of dainty ankles and silken hose, were looped large about the hips; down the back there seemed to be no limit to the number of vertebrae exposed, other than the number possessed, while in front the line of exposure seemed drawn at the milky way. Any way, there seemed nothing to hold up what garments there was above the belt other than the natural sense of propriety of the fabric itself, and my bachelor friend confided that "He had not seen so much since he was a baby."

A matronly form swung past loaded with gems and expensively though scantly clad, while her "bread winner" heaved a sigh that opened a door as his eye followed her. I realized it was not the cost of the jewels—they had been wrested from him piece meal, were decorations won after many stormy battles, had been bought and paid for, but this gown of hers was this month's purchase and the bill was coming.

It was a dinner dance, and the spotless tables gleamed with silver, glass and flowers. The dry time was on, and the excess was only in eating too much. Soft drinks seemed a mockery and the experimenters therewith looked sad and dejected.

At an adjoining table sat a young woman who drew my attention. She was faultlessly clad, not with jewels, but gowned to perfection. Her cheeks had the carmine tint that comes from hot, happy, pulsating blood, and not from the chemist's box. Her eyes sparkled and took in every detail about her, each movement, each person, each detail of dress, nothing escaped her.

Those about here did not mistrust that she was masquerading, but she was. Year after year she had slaved, making gowns for her more fortunate sisters. Year by year she had progressed, until she had become one of the most efficient in the city in their construction, and had talent to fashion the very latest, most tasty and artistic gown. Herself always unseen and unnoticed, she had wrought them to enhance the charms of others; wrought beautiful things, only to have others take them away and enjoy them, while she, who made them, got no credit of achievement and only meagre pay. They enjoyed them, wore them, made their conquests in them, while she bid them goodbye as soon as finished. One day was to her as another day, and one year as another year, with a monotony that was killing.

But this was her night. She was at last participating in the world she had dreamed of. She had spent her hard-earned money judiciously, had wrought the gown with all her skill and was wearing it herself. Not one of the belles of the evening could feel more confidence that she was gowned perfectly than she could. This was the event of her life. For her, for this night, the cloud had lifted. Tonight she left her old common place world, came into and became a part of that world of the others, that enchanted world of which she had dreamed, but which had always seemed so far away, so inaccessible, so unattainable, so impossible.

She saw gowns she had made sweep past her in the dance, taking in their every detail and noting that very largely the owners of the gowns, while ignorant of how to make them, did not even know how to wear them when they were made. She noticed gowns made by others than herself and her eyes had a satisfied twinkle that testified she was proud of her handiwork.

To the tired society belles and matrons this was only one of the many events, but to her it was one looked forward to and long to be remembered and looked backed to. From now on she could go back to her work, realizing that for one evening she had particpated in that for the garbing of which she had spent her years. She had been on the inside.

GATES.

THE PANACEA FOR UNREST.

THE COUNTRY has been flooded with oratory and literature offering cures for what is termed the state of unrest. Nearly every class of people from quacks to professors of economics has been taking a hand in the matter, and on all sides we are hearing about panacea of unrest, and after reading a lot of them one feels like saying, "there ain't no sich animal."

There comes to us, however, in The Sphinx Talks, editorials by Basset, a splendid suggestion, which is to the effect that education of workmen in the fundamentals of business economics will contribute materially to relieving that spirit of antagonism between capital and labor. For example, he says:

Few workmen realize that relatively little capital is in the form of money. They don't stop to think that anyone who saves, buys a house or a piano, is a capitalist, and that if capital were confiscated he would suffer with the other richer capitalist.

"He demands interest from the bank on the savings he puts by for old age—but he forgets that the capitalist who builds the plant he works in is also entitled to interest.

"We don't teach these fundamentals of economics in our public schools, and you may be surprised therefore to find that even some of your well-up executives are not well enough informed on these basic principles to offer a better argument to Bolveshevik teachings than 'Oh bunk.'"

This idea of teaching workmen economy, and the studying of business and business economics in a broad fundamental way, is one of the best suggestions that has ever yet been offered. A little more earnest attention to this and a little more sticking to work and the brass tacks of everyday life and necessities sounds better to us than any sudden departure along the experimental paths of new ideas.

This is not a year for idle loafers nor for shorter hours of labor.

A BIG MARKET FOR AMERICAN BRICKMAKING MACHINERY IN FRANCE AND BELGIUM.

Alfred Thomas Marks.

RECONSTRUCTION in France and Belgium, according to advices just received from our consular and trade representative there, means a big demand for our American brickmaking machinery and equipment. In fact, the call for the machinery for making brick far exceeds that for our brick itself. Information received by the Department of Commerce, in Washington, from practically all of the districts of Belgium and northern France shows an immediate demand for machinery for producing both brick and building tile.

The principal brick-manufacturing centers of France and Belgium are Marseilles, Angouleme and Lille, France, and Brussels and Boom, Belgium. Of these, Marseilles is by far the most important. It supplies a large demand all over France besides exporting to many Mediterranian ports. At both Marseilles and Angouleme there are most unusual opportunities for American brickmaking machinery. In the north of France, of which Lille is the most important center, and in Belgium, where the brickmaking plants are mostly grouped around Boom, there is a big demand for brickmaking machinery, which is obtainable from no source at present but the United States.

Although building has not yet begun on a large scale, due to the dismantled plants, all of the brick manufacturers foresee a tremendous demand coming early in the spring which will be far in excess of any previous demand and away beyond the capacity of the plants to supply. Belgium brick manufacturers have a good export trade with Holland in addition to the domestic demand.

The end of the war found nearly all of the brick plants of northern France and Belgium dismantled and ruined. Labor there is very scarce, with wages about three times greater than previous to the war. Fuel can scarcely be had at any price. Some plants were totally demolished, all in the German occupied area were completely dismantled and the machinery carried off, while nearly all of the plants left intact in northern France and Belgium are worthless due to nearly five years of enforced idleness. To put these plants in condition to supply the demand for their output will require an enormout amount of machinery. An idea of where this machinery is expected to come from may be had from the following information, which I have been able to secure from various authoritative sources:

Some brickmaking machinery is manufactured in France, England, Belgium, Italy, Switzerland and Germany. But these manufacturers now have orders for far more than they can produce within the next three years. Here is where the opportunity comes in for the American machinery, and our brickmaking equipment is fairly well and favorably known in both France and Belgium.

Where American brick machinery manufacturers have European patents it is said to be quite likely that the European makers would be interested in the purchase of exclusive rights. A well-informed source makes the statement that United States manufacturers of brickmaking equipment who are willing to extend credits covering some time, these being well secured, can have the lion's share of the trade.

Future business will more or less depend upon the success or initial installations. Some American brickmaking machinery has not proved an entire success in Europe because of improper installation or failure to supply the type of machine best suited. In one case, the writer is told, the machine required too much power. As a matter of fact, the production was in proportion to the power required, but conditions at the plant made it preferable to instal two smaller European machines in the place of the heavy American machine. Although the scarcity and high cost of labor make American production methods much more desirable than formerly, they are not yet ready to adopt them without some modifications. More sales would result by trying to supply the kind of machinery desired by these countries.

The general application of the Hoffman type of kiln in Europe is said to effect a comparatively low fuel consumption. Quite a few of the French and Belgian plants may be considered modern in nearly all respects. The criticism oftenest heard is that there is a tendency to install too many small units, and to sacrifice production in the effort to make the machines last as long as possible.

There are, however, a great number of antiquated plants dependent entirely on cheap hand labor, and this is no longer available. The general arrangement of these plants, it is said, would permit the installation of modern machinery and improvements, namely: the use of mechanical excavators for mining clay, the use of industrial railways and mechanical conveyors for handling clay, and the finished product, the substitution of machinery for the hand-molding process (the soft mud machine for plants making only brick, the stiff mud machine for larger plants making both brick and hollow tile, the nature of the clay would govern the selection of the machine); the erection of buildings or sheds to protect material, machinery and workmen so that the plant could operate regardless of weather conditions.

As an example of the possibility of improved methods, attention is invited to the case of a French plant making common building brick. The present maximum capacity of the plant is 35,000 brick per day. Clay is mined by hand. Brick are hand-molded, dried by air in racks under sheds, and burned in a Hoffman kiln. No machinery of any kind is used. The plant cannot operate in bad weather. About 80 men are employed. The following improvements suggest themselves: A shed for storing clay, a conveying system for carrying clay either from the storage shed or from the pit to the molding machine, a stiff mud machine with dies for making either brick or hollow tile, a waste heat drier, electric power from central station. By these installations the production per day would be increased from 35,000 to 50,000 and the labor reduced 50 per cent.

THE OUTLOOK.

The new year brings to the clayworking industry the brightest outlook in the way of trade prospects ever seen in the history of the industry in this country. Every indication points toward good business and busy times in practically every branch of the clayworking industry from pottery to fireproofing, with an especially bright outlook for structural products. Not only is the country short on homes and housing for humanity of all kinds from the modest home to the big hotel, but there is also a shortage in business and commercial structures and there is active planning for building that plainly indicates a big year ahead. Moreover the indication points toward the use of a greater percentage of burned clay products than ever before. Right now it costs more to build than ever before, and this has caused some hesitancy the past year but in the new year there is evidently to be more building in spite of the high cost. One effect of the high cost is to increase the desire to build better and more permanently, and this is an influence that makes for a larger use of brick and hollow tile. In fact, the demand looms so big that the main question of the day is that of the industry being able to supply the demands which will be made upon it. It looks like a big year, full of bright promises for the whole clayworking industry.

CLAYWORKING IN MEXICO

Interesting Facts Concerning The Revolution Torn Republic As Gleaned by an Illinois Brick Manufacturer.

IT APPEARS TO be an axiom of the native Mexican clayworker—a heritage of the ages—that while it is all right to burn clay in the process of manufacturing necessary terra cotta gods and idols, crockery and pottery, flooring and roofing tile, and perchance even drain tile, no one but a fool should think of squandering his energy and wasting good fuel in the process of burning brick when he might without effort enjoy a fiesta in the shade and let the sun bake the brick for nothing. There are exceptions, it is said, to all rules; and I must even admit that in the matter of native Mexicans of their own volition burning brick the rule holds true, for I saw them doing it down in a country not so long ago inhabited by cannibals in the region of the Isthmus of Tehuantepec. The mud was pugged and tempered by naked men and boys, who tramped it with their feet. The brick were hand-molded, sun-dried and then burned in a great cistern-like hole in the ground. The brick were first set in the bottom of the pit and a blazing fire built on top of them, the hot coals falling down among the brick. I do not imagine that the burning was wholly for the purpose of improving the quality of the product, but rather an effort to obtain variety of tint and color.

Walter Colyer, Albion, Ill.

The Aztecs of old made beautiful pottery and their dark-skinned descendants continue to be ceramic artists. The artistic elegance of the wares I saw hand-fashioned, delicately decorated and then burned in their crude way by the Cuernavaca Indians would do credit to more pretentious artisans. The burning was accomplished by the use of dried animal dung for fuel.

Mexicans are instinctively carvers and builders of stone, workers in cement and concrete, and artists in the application of stucco, and seemingly ever have been, as their many beautiful, wonderful and gigantic prehistoric structures abundantly show. At Mitla and also on the top of the Albus Mountains, in the state of Oaxaca, I have seen concrete floors more than a hundred feet square, exposed to the elements, and as perfect as though made but a few years ago, despite the fact that scientists figure their construction to have antedated the birth of Christ by several thousand years. How those Toltecs, or by whatever name we choose to call them—those mysterious and forgotten people—manufactured their cement is a lost art, but certain it is the present-day cement manufacturer has yet much to learn before he can hope to equal it.

A cut-in-to and exposed section of the great Cholula pyramid, located near the city of Puebla, believed to be the most massive pile on earth of human creation—several times the size of the big pyramid of Egypt, discloses interesting structural work. The Aztecs held to a tradition that it was built by a race of giants whose primary ancestors survived at a time when all others perished. At any rate, whoever built it, I am prepared to believe they knew nothing about the value of burnt brick as a building material. The larger of the several pyramids at Cholula is constructed near the base of broken stone and mud, possibly before the invention of cement. Higher up are alternate courses of concrete, rock and clay; but for the building of the upper section of a hundred feet or more the boss on the job evidently came to the conclusion that big sun-dried blocks of mud were good enough. As a matter of fact, I do not recall having seen any fire-burned brick in any prehistoric structure of Mexico. The only burned clay I saw at Cholula was contained in a number of hard-burned, weather-beaten facial images I obtained on the great pyramid, possibly molded to preserve the features and the glory of the most distinguished mound builders.

Street Scene—The Man Might Be Hauling Oil to Lubricate the Machinery of the Brick Plant at Monterey, But He Is Not. His Barrels are Full of Something Stronger Than Oil. Below—Clay Masks of Distinguished Mound Builders and Clayworkers Who Possibly Lived Thousands of years Before Christ.

It is due the Mexican peon to say that when properly directed and removed from the environment and lure and loot of revolution, and not too much incumbered by an overload of holidays, he makes a faithful and fairly dependable brickmaker, as has been proven at Monterey, Mexico City, Tamos and elsewhere, places where the experiment has been successfully tried out.

When last January I was at musty old Veracruz, where grass grows in many miles of cobble-stone paved streets, and where such of the town gentry as are not now serving as patriots in the army of either Carranza, Diaz or Pelaez, continue to parade about in sway-back carriages of the George Washington vintage, in a two days' sojourn I failed to see so much as one new building in course of erection. However, some repairs were in progress in the usual leisurely manner characteristic of the Mexican workman. Rumbling and squeaking along the streets was occasionally to be seen a regulation high-wheeled three-mule cart loaded with salmon brick almost as big as grandfather's tombstone. To be more exact, all the brick being used in this city of fifty thousand population were 2 5-6"x5"x10½". When I rather foolishly expressed my surprise at the unusual size of the builders I received in lieu of a verbal reply an amazed look expressive of pity for one so ignorant of the correct dimensions for a burned clay brick.

It is possibly needless to state that vitrified brick are but little used for paving streets and roads in Mexico. Particularly in the Gulf coast region asphalt is too plentiful and the natives too much addicted to the use of cement for the demand for paving brick to gain much headway. Then, too, shells are plentiful, and they are being used as a paving material quite extensively in Tampico and the region round about.

Down at Tampico, that amazing present-day cosmopolitan city of a hundred thousand population, the one Mexican city that defies revolutions and continues to rapidly advance, where everything is smeared with oil and saturated with million-dollar possibilities, big business demands brick, and plenty of them, in big piles and heaps scattered about almost everywhere. They are, as a rule, to be sure, very common brick, manufactured out of an indifferent quality of crumbly clay in small American-owned plants a few miles up the Panuco river. For the use ordinarily made of them they are regarded as quite satisfactory. It is not the common practice of the Tampico architect and builder to use brick in the construction of even modern three, four or five-story structures for the outside finished wall. Brick are generally considered in that city as only a convenient form of material for constructing a rough inner shell or frame on which to hang the outside stucco finish. The owner then exercises his own aesthetic whim as to choice of pattern or tint for the outer embellishment. The Mexican brickmason is exceedingly saving of his struck or finished mortar joints. Some of the great foreign oil companies are liberal users of brick, and at their up or down river terminals and general headquarters build as we do in the United States, sometimes importing large quantities of brick from the Atlantic or Gulf ports of this country.

There would seem to be great opportunities in Mexico, especially in the Gulf coast country, for the building of bigger and better equipped brick plants when the present chaotic state of the country is reduced to that of law and order. Mind you, I do not say when Mexico returns to its normal condition, for the simple reason that a friend of mine long resident in Mexico assures me that the present condition of Mexico is perfectly normal—the same condition it has been in for four hundred years, save only during the abnormal period when Porfirio Diaz ruled harshly and well. There are abundant and readily accessible deposits of what I believe to be a good quality of blue shale for us in brick manufacture in the vicinity of Tampico, but not to the extent of my knowledge has this material ever been tested or utilized.

Reverting to the subject of hard road building, may I not be permitted to surmise that those American hard-road engineers who still persist in constructing brick streets with high-arched crowns borrowed the idea from Mexico? When once down in the lower country bordering on the Pacific, where the royal bougainvillea blooms and the giant cactus grows, it was my good fortune, as well as my discomfort, to be galloped several miles over possibly the oldest rock-paved highway on earth, starting as well as I could see from no place and ending nowhere. At a guess I would say this road is thirty-five or forty feet wide and the outer edges fully two feet lower than the ridged center. The guide knew not of so much as a tradition relative to the identity of its builders, nor did any one else whom I consulted. This high crown or ridge in the center of the thoroughfare referred to does not appear to have been the Spanish idea as practiced in Mexico. It has been my own observation that in such early Spanish-built Mexican cities as San Luis Potosi, Saltillo, Zacatecas, Aguascalientes, Cuernavaca, Puebla, Oaxaca and numerous others the practice was the reverse—the outside of the street was built the highest, with the slope for the drainage toward the center. Where a sewerage system is lacking this method may have its advantages. There are other prehistoric highways in Mexico built "on the level," sloping toward neither the center nor the outside.

WALTER COLYER.

Scenes Near the City of Oaxaca, Mexico, Where Brick Pavements Are Not Known, Rock Are Good Enough. The Man Pictured Was Neither Drunk Nor Dressed Up, Nor Was He Spoiling for a Fight, But Was Just Tired of Making Sun Dried Brick. On Either Side Is a Picturesque Highway Over Which Trod the Victorious Army of Cortez the Conqueror Four Hundred Years Ago.

Burning Clay Wares

by

Ellis Lovejoy

Written for The Clay-Worker.

THE CLAY-WORKER.

PART XIV.

CAR TUNNEL KILN (Continued)

An OUTLINE of the Drayton kiln is shown in Fig. 180, longitudinal section, Fig. 181, plan and Fig. 182, cross section through the furnace. The kiln is in reality a compartment car tunnel kiln with advanced heating flue.

The kiln is divided into sections holding three cars each, more or less as may be decided in designing the kiln. Three cars are put into the kiln at one time together with a short car carrying a division wall which in effect is equivalent to a division wall with its accompanying bag or flash wall in a compartment economizer kiln, as shown in Fig. 180.

The car furniture is constructed to form under floor flues which connect the compartments through vertical flues in the division walls. In the main walls on each side of the division wall cars throughout the burning and heating-up zones are built up sliding vertical dampers, and through a slot in the crown over each division wall car is a horizontal fire clay damper. When three cars of ware, more or less as the plan may be, followed by a division wall car, are put into the kiln, the division wall cars come opposite the damper slots. Exact placing is necessary only to the extent that the damper slots shall come within the limits of the division walls, and since the division walls may be made any thickness, ample leeway may be provided for the variation in the position of the cars. Following each lot of cars, the side dampers are shoved in and the top dampers lowered, to contact with the division walls. In the cooling zone up to the combustion zone there are no dampers, but beyond, each zone is fully dampered by vertical swinging metal dampers in the side walls where the heat does not require fire clay construction. The operation is as follows:

A fan forces air into the cooling zone, through the ware, through the car floor flues, and under the cars, up to the combustion zone division wall. The air under the cars passes

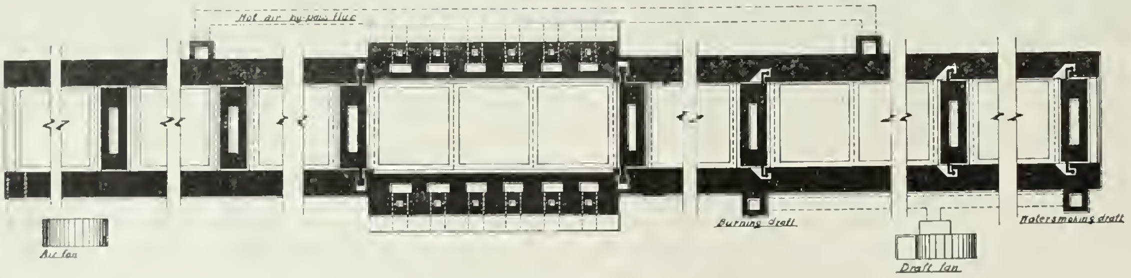


Figure 181.

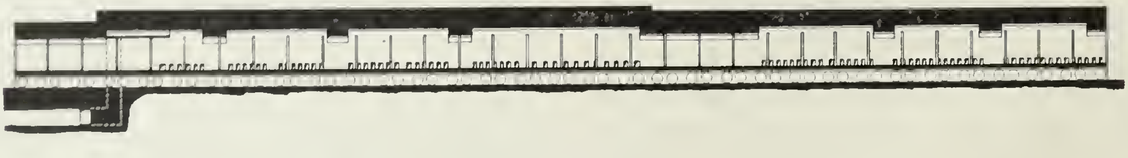


Figure 183.

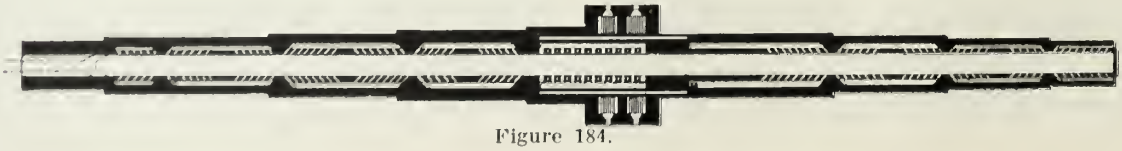


Figure 184.

forward and is delivered under the furnace grates. The combustion gases pass down through the ware, up through the division wall flues, into the next compartment, and similarly through several compartments, and, finally, are drawn off by the draft fan.

Hot air is diverted from the cooling zone through a bypass flue to the water-smoking compartments.

The advantages which the kiln offer are: independent compartment control, down-draft operation, and separate water-smoking.

The Faugeron kiln, illustrated in Fig. 183, longitudinal section, Fig. 184, plan, and Fig. 185, cross section through the combustion zone, showing air inlets, is being introduced in this country in the manufacture of fire bricks and pottery.

The kiln is divided into sections by drop arches, or more correctly by step downs in the tunnel crown. The walls are hollow on each side from the center of drop arches to points midway between them, and the inner walls are perforated at the level of the top of the car floor. The ware on the car is set to fit the tunnel under the drop arches closely so that in passing these points the free area is so restricted that the air or gases will be at least in a measure forced out into the hollow space in the walls to return to the tunnel after by-passing the restricted space. One will readily understand the theoretical movement of the air and gases. The tendency always is to rise into the crown space over the cars and to move forward under the influence of the draft. When the air reaches a drop arch it is forced downward and since it cannot readily pass forward under the drop arch, nor alongside the cars, it must pass down among the ware out through the wall perforations into the hollow space, and then after passing the drop arch section, it is forced to re-enter the tunnel at the car floor level and naturally rises into the crown space. This sinuous course, even though the operation is imperfect, suffices to bring the air, or gases, fully in contact with the ware. In the combustion zone, direct coal fired though not necessarily so, the hot air is distributed under the grate bars for primary combustion and through the bridge and diaphragm walls for secondary combustion. The combustion gases enter the tunnel through the diaphragm wall at the car floor level and thence take a sinuous course to the draft outlet, thus giving up to the green ware the waste heat just as the entering air collects the heat from the cooling ware. It may be noted that the ware must be of such a character and so set as to offer greater resistance to the passage of the air and gas under the drop arches than through the wall slots and by-pass flues.

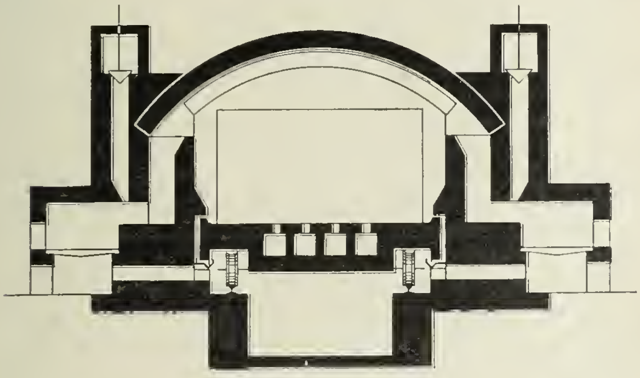


Figure 182.

A heat balance of such a kiln by Prof. C. B. Harrop in Vol. XIX, Trans. American Ceramic Society, shows the following results:

3.27% Unconsumed combustible matter in the ash pits.
35.83% stack losses, including dehydration.
17.27% in cars and ware leaving the kiln.
45.00% radiation loss.

101.37% total.

The results show greater consumption than fuel supply, but considering that all the determination, including radiation, were direct, the results check up very closely and are more satisfactory than data in which some important item is determined by difference. The usual method is to determine radiaiton and kiln losses by difference and thus hide the errors which may have been made in the direct determination of the other factors.

The heat balance of a producer gas fired economizer kiln by Prof. R. K. Hursh, University of Illinois, in Vol. I, No. 8, Journal American Ceramic Society, is as follows:

.6% unconsumed combustible matter in ash.
14.7% producer loss.
32.4% stack loss.
43.6% consumed by the ware.
8.7% radiation and kiln loss.

It is to be regretted that scientists have not adopted some definite interpretations of heat balances and it is also to be regretted that the results are not given in pounds of fuel.

A. V. Bleininger, in Heat Balances of Industrial Kilns, gave the percentage fuel consumptions required for the ware as follows:

Sewer pipe, 5.7 per cent.; paving bricks, 11.3 per cent.; terra cotta, 12.6 per cent. and 8 per cent.; common bricks, 19.6 per cent.

Prof. Harrop, it will be noted, does not give any heat required by the ware except that removed from the kiln in the cooling bricks and the dehydration losses.

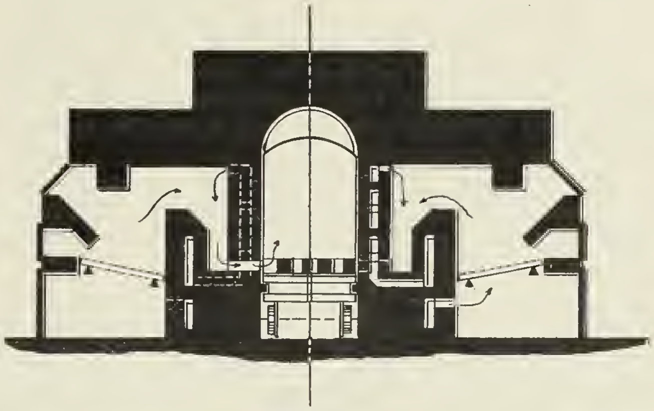


Figure 185.

It is beyond our present knowledge to estimate the heat actually required to burn clay wares. We must heat the ware to a certain temperature and during this heating certain pyrochemical changes take place which may or may not require heat, but probably very little heat is required to effect these changes or given up by them. The estimated heat required then is based on the temperature and specific heat of the clay and ware, taking into consideration, of course, the heat rerequired for dehydration.

The heat required for any given ware will be the same in any type of kiln and the economy of the kiln will depend upon the other factors, particularly the possibility of recovering the heat in the ware. In Bleininger's kilns there was no recovery of the heat from the ware, at least not for use in the kilns, and when the burns were finished the ware held the heat value given in the percentages.

The percentages are low simply because the total fuel required for the operations was high.

In two of the five periodic kilns the radiation loss in per cent. was less than Harrop found for the car tunnel kiln, but in pounds of fuel the periodic kilns will show a higher loss than the car tunnel kiln.

Prof. Hursh, in the compartment economizer kiln test, gives the ware requirement at 43.6 per cent., which considering the total amount of fuel used and the kiln temperatures attained, will compare approximately with Bleininger's results, but all of this heat is given back to the kiln operation and the heat actually retained by the ware is practically none. In consequence of setting aside 43.6 per cent. of the total fuel for the ware, Prof. Hursh gets by difference the remarkably low radiation loss of 8.7 per cent. He has not taken into account the heat from the cooling ware which is carried forward into the burning compartments and the actual heat lost by radiation during the period of the test will be that given plus the heat derived from the cooling ware.

Clayworkers are deeply interested in the study of kilns, and it is unfortunate that any technical data should be misleading. On the face of the returns from the several tests the clay worker would naturally give the preference to an economizer kiln in which the radiation loss is only 8.7 per cent. of the remarkably low total fuel consumption. In pounds of coal this loss would be very small. Compared with this, the 45 per cent. radiation loss from Prof. Harrop's car tunnel kiln with its higher total fuel consumption, makes a poor showing.

The car tunnel kiln may be less economical in fuel than the compartment or other type of economizer kiln but there is no such itemized difference as the two heat balances show, and there would be still less difference were the same ware being burned.

Both kilns can reduce the temperature of the gases to a minimum before they are drawn off into the stack and in stack losses on the same ware there should be little difference. Both types can be thoroughly insulated and the radiation loss should not widely vary, while in the ground and kiln absorption loss the car tunnel has the preference because the hot zone is fixed and there is no cold wall mass to be heated up as in the compartment kiln.

The ware from each, if the kilns are properly designed, will approximate atmospheric temperature before it leaves the kiln, and the heat actually consumed by the ware will be the same in either type of kiln.

(To Be Continued)

HIGH GRADE TRUCKS WILL SOON BE OVERSOLD.

Congestion of freight transportation facilities has already assumed a very serious aspect and this winter will experience difficulties that will surpass those of the winter of 1917, according to R. E. Fulton, Vice President of the International Motor Company. Mr. Fulton warns shippers to prepare now to meet the emergency.

"During the congestion of 1917, the motor trucks in use hauled 1,200,000,000 tons of goods," he says, "and this year with production greatly increased and the railroads crippled by the coal shortage, the demands upon the trucks will be many times greater.

"The inability of shippers of goods to get satisfactory service from the railroads has already caused many of them to use motor trucks, and if the present demand keeps up, the production of high grade trucks to meet the demand will be impossible. It is significant to note that the sales of Mack trucks last month increased 58 per cent. over the month previous, and that his heavy demand is increasing steadily.

"Another point that shippers should not overlook is that the railroads are pretty sure to be turned over by the government to their owners about the first of the year, and that increased freight rates, as a result of this, are inevitable. The Esch railroad bill, which aims to give the railroads a helping hand during the period of transition, has provisions which stipulate that the railroads shall immediately apply for increased freight rates.

"This certainty of increased railroad rates as well as the inadequacy of the railroads to give the kind of service that is being demanded, points to an oversold condition in the high grade truck market before very long. Business men in order to be sure that their freight will be handled should place their orders for sufficient motor transportation now, while deliveries are obtainable.

"The increased demand for trucks from foreign countries will also have a big influence on conditions. Export sales of Mack trucks last month were the biggest yet, many going to Peru, Cuba, Norway, Argentina, Holland and Mexico."

Written for The Clay-Worker.

CINCINNATI BRICK AND BUILDING NEWS.

CONSIDERING THE SEASON the brick and clay situation here is as promising as it could be hoped for, and the indications are favorable for a better business just as soon as the weather becomes at least fairly settled. Of course, there will be no great revival to the building conditions, at least for some weeks, but there is a feeling of optimism in the atmosphere that gives every promise of a good time ahead. Prices are still high on many lines of material, and, labor being high, there is no immediate prospect of the conditions showing any change, at least if we judge of the entire situation.

There is a decided lack of homes here; the shortage being of some months' standing, and this, with the crying need for such, as well as for other demands of brick, make the future very pleasing and the brick outlook good for the new year. The supply of building brick locally is very limited now. There are a few of the lesser plants in operation, that is, where they are fixed for winter handicaps, and in this way some slight progress can be made. However, the fact that during the last months of 1919 there was a big demand for brick and a somewhat limited stock, has been bad for the present demands.

It is likely to be some months before the supply can be made even nearly normal, and if the demands do become very large, it will be a problem how to care for this demand adequately. The prices are high, but with a short stock these will hardly be lowered, for a time at least.

More attention is now being given the question of home construction in this city, and in order to boost the idea of more building the local builders are trying to inculcate the idea of making some innovations here that will lower the cost and at the same time that will prove to be a practical means of increasing the number of homes.

One topic that has come in for consideration in this connection pertains to the use of construction materials. It is a known fact that Cincinnati is very partial to brick construction, and while some other sections may be willing to adopt different kinds of materials, brick is the favored kind here. So, in order to still help the cause of more homes along, the question of the brick veneered house is noted as a means of reducing the cost and thereby increasing the number of brick homes. The veneered brick walls have been found a satisfactory method of construction, and if this idea was more widely adopted it would still be a help to the brick man who could sell more brick on account of the larger number of houses that would be builded.

Plans are now being perfected to hold a "Build Your Own Home" Exposition here at Music Hall, March 6 to 13. The show will include all kinds of building material as well as all kinds of furnishings that enter into the same, making it a complete display of its kind. It will be rather in the nature of an educational bureau so that prospective home builders will be enabled to get some practical ideas and some helps in this way that will count for a good deal. Among the other topics that will be taken up is that of showing how to build a home on a plan that will enable the home builder to finance his project with care and ease. The show is to be held under the auspices of the Hamilton County League of Building Associations, and it will be in charge of experts who can enlighten visitors on the methods that will make this possible. It is expected that in addition to local manufacturers and dealers in various kinds of building materials that a number of out-of-town concerns will also exhibit at the show.

The Cincinnati Brick Club of the Chamber of Commerce at a meeting some days ago decided to place an exhibit in the Build Your Own Home show to be held at Music Hall in March. The amount of space to be taken by the brick men will be about 200 square feet. This will be a notable feature at the show, and should help in the cause to boost the use of brick for home building.

The annual report of Building Commissioner George E. Rendigs shows that the total number of permits of every character issued during the year was 7,543, and the value of the building improvements contracted for was $10,345,995, as compared with $4,856,593 in 1918; $10,451,315 in 1917, and $10,842,895 in 1916.

A number of new projects are being considered for the present year, and some of these includes five different fireproof apartment building projects, the only question being as to whether the people would be willing to pay the rental that would be necessary to make them paying investments. These are being considered for construction in and about Avondale and Walnut Hills. In one case the plan calls for a twelve-story building which would contain hotel features. The fact that the rental would be high is one of the principal drawbacks to the idea, as the people here are not accustomed to paying very high rents.

The Atlas National Bank is to build a new structure that will be at least ten stories high, to be used as a bank and office building. At present the bank is located on Walnut street, between Fifth and Sixth streets, and the new structure will be on and adjoining the present site. Tietig and Lee, architects, are to prepare the plans for the building, and it will be constructed in such a way as to make it possible for the bank to continue operations at its present location until the new building has been completed. Work will be started iu the spring.

A large building is to be erected by the Hamilton County Pythian Association, composed of representatives from all lodges of the Knights of Pythias in the county. The funds for the building are being raised among the members. The building will cost about $150,000 and will be located on Ninth street near Vine street. It will be large enough to care for four lodges. It will be erected this year and will care for all the lodges in the county. There will be a kitchen with accommodations for 1,000 persons at a time for dinner.

The general contract for the building of the new home for the Gibson Art Co., at the southeast corner of Fourth and Plum streets, has been awarded to Frank Hill Smith, of Dayton, O., who will also prepare the plans. The building will be six stories, brick and terra cotta trimmings exterior, and will have a frontage of 112 feet on Fourth street. It will contain 114,000 square feet of floor space. Work will be started in the near future.

A new club house is to be built by the Price Hill Business Men's Club, at Warsaw and Enright avenues. It will cost $50,000. Two plans have been submitted, but no decision has as yet been reached.

Plans are now being prepared for the building of a group of residential buildings to be built on both sides of Rose Hill avenue, in the Avon Hill subdivision, by Joe. Coyle, builder and architect. They will cost more than $100,000. Ground will be broken before long for two dwellings, each costing more than $8,500, the only contingency being the weather.

The Oakley Machine Tool Co. will erect a building to cost more than $30,000, at Thirty-fourth and Robertson avenues, the plans for the improvements now being made.

C. C. and E. A. Weber, architects, are preparing plans for a ten-room brick house for Colonel Brutus Clay, to be built on the Clay farm near Richmond, Ky. Bids are being taken for this work.

S. D. Cooper, builder, will construct a six-room dwelling on the north side of Moeller avenue, near Montgomery road, Norwood. It will cost $7,500.

C. M. Foster has completed plans for the building of a seven-room brick bungalow for Clay Osterman, to be erected on Grandvista avenue, Pleasant Ridge.

Potwin and Tunick, builders, will soon let contracts for the building of three brick bungalows on Eighth street, between Hermosa and Fisher avenues, Price Hill, to cost $10,000 each.

The name of the Cincinnati Clay Co. has been changed to that of the Evans Builders Co., the change being deemed advisable for certain reasons. The reports show that business is only fair at this season of the year. Mr. Bliss, manager of the office, is out of the city.

The situation with the Builders Material Co. is about all that can be expected at this season of the year. W. J. Pugh, Jr., who has been away from the office for some time engaged in other lines, has again become indentified with the company.

The Queen City Shale Brick Co. is working its plant every day and finds the demand to be very good, with the outlook satisfactory for the new year. Labor conditions, however, are not satisfactory, and this is a handicap. The company is now preparing to build some new kilns at its plant which will be a help in increasing the plant's output. This company makes shale and hollow building brick. CINCY.

TRUCK OWNERS MAKE NEW TRANSPORTATION RECORD

What is believed to be a new record in motor truck efficiency, considering distance traveled, time taken and size of load, according to information received by the International Motor Co., of New York, was recently made by Lee B. Hawkins of Moneta, Cal., who operates a fleet of eight Mack trucks.

A seed firm near Los Angeles wanted to ship 15 tons of seed in a particular rush to another town 225 miles away. No freight car was available, so they asked Hawkins if he could make the delivery in two days. He took the consignment, and with two of his Macks, one carrying ten tons and the other five, started out for the town of Calexico the next morning. At night a stop was made and the trip resumed at dawn. Calexico was reached in thirty hours after the start.

Arrangements were then made to receive a return load of nearly 15 tons of dried milk at El Centro, 10 miles from Calexico. This was delivered at San Diego, a distance of 100 miles. There 15 tons of fish were loaded on and delivered in Los Angeles, 130 miles more.

Reaching home at Moneta at midnight, one of the trucks hooked onto a trailer and the truck and trailer delivered 17½ tons of tomatoes by next morning to a cannery 25 miles away. At a town nearby, 7½ tons of well casing were taken on and delivered that night at Elsinore, 100 miles away over the mountains.

Compare this performance with what would have been done by railroad transportation. No more remarkable example of motor truck efficiency could be asked for. There have been many instances of unusual performances of trucks that have been staged as stunts by dealers or manufacturers, but this is a case where the owner capitalized on the proved utility of his trucks. It shows what any other owner can do if he solicits return loads in a persistent manner.

HOW MOTION PICTURES CAN HELP MAKE AMERICA SAFE FOR AMERICANS.

BY WATTERSON R. ROTHACKER,
President Rothacker Film Mfg. Co., of Chicago.

THE BOYS MADE good on the job over there. Let us all pitch in and make America safe here at home. The present unrest, in all its phases, will pass away in time. The great majority of the 110,000,000 are too thoroughly American for anything else to happen.

Doctors tell about diseases which, if left alone, will wear themselves out in time. There are certain phases of the present situation which should not be left to cure themselves through the wearing out process. They should be uprooted—cured once and for all—lest in the future from time to time they break out afresh in running sores.

There is only one medicine to use to cure these diseases of America. That antidote is education, enlightenment. Motion pictures would be peculiarly effective in spreading propaganda of Americanism.

There are in this country quite a number of people who favor tearing down the present United States government and rebuilding it according to blue prints already prepared—in Russia. Of course, some of these are the professional sowers of discontent whom education would not affect. But the majority would be susceptible to education, if the enlightenment were presented in the right way.

These people actually believe that the only way to improve the world generally, and their own pay envelopes particularly, is to go around and shoot all present employers full of holes. They have been so told by the silver-tongued persons who make their living by stirring up trouble. Nobody, to speak of, has ever taken the trouble, effectively, to tell them any different.

Oh, yes, great magazines of national circulation have pointed out to them the error of their ways, and newspapers have exposed their leaders. But these people do not habitually read those publications. The only papers or magazines they do read don't happen to be published in the interests of America; the only papers they read would not consent to print the kind of Americanism message which, for the good of those people as well as the rest of us, should be driven home as soon as possible.

The power of the motion picture screen cannot be harnessed any too quickly to the task of Americanizing America. Specially printed messages which employers might distribute among workers of that class would fail to accomplish the purpose to any very great extent. With great aforethought the trouble makers have taught these people not to listen to any messages from anyone but their leaders. Therefore many of the messages an employer might distribute never would be read at all. But the Americanism messages would be read if told on the screen between the appearances of Mary Pickford and Charlie Chaplin.

A printed appeal would fail to reach all of these people for another reason. Many of them cannot read English. Films, which speak in the universal tongue, can be understood by the most polyglot group of workmen ever assembled within the melting pot that has failed to melt thoroughly. A few educational films added to the flames might bring the contents of the pot to the melting temperature.

Americanism films could be shown in factories in a darkened workshop at noon to the very workmen who need to hear some of the things their leaders have not told them.

To get the best results, of course, the Americanism films should not be plain screen sermons. The most ingenious brains in the country should be set to planning these films. The pictures ostensibly should be regular feature films, with hero, heroine, villyun 'neverything—the entertainment value should be of the highest grade. But at strategical places in the films should be planted hidden sermons—fundamental Americanism principles—which the lowest-brain-powered workman could not fail to grasp and digest.

For one thing, a picture dealing with the radicalism situation should contain a contract showing the present condition of American workmen and the condition of his brethren in Russia under Trotzky. The Rothacker company has recently made some advertising pictures that show the welfare features which progressive American employers are providing for their workers. And the company has on file in the vaults at the Chicago laboratory studio a large number of industrial films which show the conditions under which American workmen live and work. If any group of Americans seriously undertake to spread truths of Americanism through the medium of the motion picture screen, the company will gladly give them—without profit—copies of any of the films in its vaults, and I am sure the clients for whom the pictures were made would gladly consent to have them so used.

Watterson R. Rothacker.

America will not be safe for Americans as long as any group of workingmen, headed by radical leaders, is permitted to declare a strike which threatens the nation's very industrial existence. There was a time when the sympathy of the public was with strikers in most every instance. There was a time when the people took it for granted that a striking union was waging a battle against the demon employers for the good of the common people. But recently a great light has begun to dawn in the minds of the people. It is only necessary to clarify, through education, this glimmering thought in the public's mind. Now is the psychological time to strike the hot iron.

The people are beginning to realize that when radical leaders precipitate a big strike, often against the wishes of the majority of union men, the public is the ultimate goat.

Is there to be no limit to strikes—no limit to what radical leaders may do? Americanism films could put this question squarely up to the American people. The films should shed full light upon all phases of the question.

Twenty million Americans attend the motion picture theaters every day, and over half of the population are regular movie patrons. If educational films put this strike question up to the people the verdict just might be an anti-strike, or strike limitations law, which would prohibit any group of men from paralyzing a vital industry.

Of course, strikes are the uneconomical, un-American way to settle disputes. If a man has been wronged by his neighbor, he must seek redress in the courts rather than at the point of a shotgun. Strikes are inimical to the public welfare. The people might decree that there shall be a labor court, which would determine the minimum an employer could pay employes for the welfare of those employes and the maximum wages workers could demand from employers for the welfare of those employers—and the welfare of the general public.

The people just might so decide in face of the inevitable cry against "the blow at personal liberty, guaranteed by the Constitution, etc., etc." For that matter, it is an encroachment upon a human's right to do as he pleases—and the public be damned—for the law makers to prohibit murder.

FRENCH RED EARTHENWARE AND OTHER POTTERY.

THE CLAYS in northern and central France are employed in the manufacture of high-grade pottery and china; those of southwestern France are only used for coarser work. In the Bordeaux district, the chief centers of earthenware manufacture are in the Departments of Landes and Lot'et Garonne, the former requiring large numbers of vessels for gathering and refining pine resins and keeping two large and thirty-eight small factories employed in their manufacture before the war. The most approved material for these resin pots is a combination of clay, sand and cement known as "silicocalcaire," which is stronger and more impervious than baked burning clay. All, except one of the forty factories mentioned above, are closed, and the demand is insufficient to reduce the existing stocks appreciably.

The clays and other shales of the Chalose district are easily adaptable to ceramic work and large deposits of them still remain unexploited. The kaolin found in abundance at Gaujacq is utilized, and the white clay and felspar in that region are shipped to Vallauris for use in the manufacture of insulators and sparking plugs. The pottery made at Vallauris, near Nice, is chiefly used for culinary purposes, about 20,000 metric tons, valued at £140,000 being made annually before the war. At present less than half this amount is being produced, and is sold at more than double its former price. In the Havre district, Vosges pottery is almost exclusively used for horticultural purposes, but supplies are deficient. The bulk of the pots sold in Nantes was imported from Belgium, this source of supply was cut off by the war, and the demand has not been satisfied from any other source. Prior to the war there were numerous small flower pot manufactories near Marseilles, but several of these are now closed and the present output is less than one-third of the normal. One factory has successfully manufactured earthenware articles for hospital use. In the Lyons and Limoges districts many of the works making flower pots and coarse earthenware goods have been closed. The demand for this class of ware in the Rouen district was so small before the war that its manufacture locally had ceased and supplies were obtained from the Vosges.

M. M.

METAL LATH.

Where lathing is required in cross walls and for other purposes in building operations the brick people as advocates of fire prevention and the use of fire resisting material have a natural leaning toward the use of metal. Certainly metal lath and plaster makes a better fire resisting proposition than wood lath. And fortunately for the metal people wood lath now like everything else is very high in price, which makes a good opportunity to push the use of metal lath.

NEW JERSEY CLAY WORKERS HOLD ANNUAL MEETING.

ONE OF THE BEST MEETINGS the organization has ever held was the annual gathering of the New Jersey Clay Workers' Association and the Eastern Section of the American Ceramic Society, which took place at New Brunswick on December 18. The attendance was one of the largest in the history of the organization and of the enthusiasm there was no end.

The big thought that seemed to dominate all others was the proposed building for ceramic research. This was discussed from every angle and the thought of the meeting was embodied in this resolution, which was passed unanimously:

Resolved, That the State Legislature of New Jersey be requested to appropriate $150,000 for the erection of a New Jersey Ceramic Research Station for the promotion of ceramic research in the State of New Jersey.

This building is to be erected in connection with the school now functioning in connection with Rutgers College. Those who have talked with members of the legislature and with the Governor are confident that the appropriation will be granted. All who have been seen have pledged their influence and co-operation.

Another resolution was:

Resolved, That the State Legislature provide a suitable room for housing the state ceramic museum.

This museum is a project in which Charles Howell Cook, of the Cook Pottery Company, Trenton, and last president of the association, is much interested, and he has done much good work upon it during the year he has been president. Others are interested, of course, but it has seemed as though his name has been most closely connected with the project. It would appear from what was said at the meeting that the project will become a reality in the near future.

George H. Blakely, chairman of the corporation committee of the Rutgers College Million Dollar Endowment Fund campaign, spoke at the morning session in reference to the campaign. A committee of six was appointed from the membership to solicit contributions to the fund from the ceramic corporations of the state.

The action of the executive committee in raising the dues in the association from $1.00 to $2.00 was approved.

It was reported at the meeting that the day before a group of members called upon the Governor in reference to including in this year's budget an appropriation for a new ceramic building. About thirty-five members attended the conference at the state house. The Governor appeared favorably inclined toward the project and assured the conferees of his co-operation and vote if the bill is brought up at the next session of the legislature, which convened on January 13.

These officers were elected: Chairman, Abel Hansen; vice-chairman, C. S. Maddock, Jr.; secretary, George H. Brown.

Trustees—Terms expire in December, 1920—Charles Howell Cook, chairman; George E. Hoffman, Cyrus Borgner, D. J. Fisher and Everett Townsend.

Terms Expire in December, 1921—August Staudt, A. M. Maddock, R. K. Bowman, Andrew Poltz and C. T. H. Phillips.

Terms expire December, 1922, newly elected—F. A. Whitaker, R. H. Minton, Leslie Brown, C. W. Crane and Frank W. Dinsmore.

The session began with Charles Howell Cook in the chair. He welcomed the members to the meeting, outlining briefly what has been accomplished during the year just passed, and pointing to the hopeful signs for the future. He referred to the fact that the clayworking trade has passed out of the blighting influence of the war and is now in a fair way to do much better than ever before.

At the business session, at which the resolutions mentioned were adopted and officers elected, the ceramic building, the state museum of clay products and various subjects of interest to the different branches of the industry all came up for a share of consideration.

The first paper was "Preparing for Future Competition," by Charles Howell Cook, chairman. In this Mr. Cook discussed those things which will enable the members to be ready for and overcome competition, or at least minimize its effects so that it will not seriously retard business.

The second was a highly technical, but very valuable paper, upon "Properties of Pottery Bodies and Glazes," by H. G. Schurecht, of the Bureau of Mines, Mining Experiment Station, Columbus, Ohio. While this was a technical paper, it was of value to those interested in that phase of clay working.

The next was, "Feldspar as a Pottery Material," by Homer F. Staley, Bureau of Standards, Washington.

This completed the forenoon session and adjournment was taken for luncheon. It was a cold, sharp day and the members did not go about the city, as they would have done otherwise. Some of those who came from a distance expressed regrets that it was not more comfortable, but a majority of those present knew New Brunswick and were contented to stay in doors.

The first paper of the afternoon was "A Museum of Ceramic Products," by Helen C. Perry, of the state museum at Trenton. This went over some of the ground which will need to be understood when collection of materials for the museum is undertaken upon a large scale. Something has already been done. It is a beginning and the work promises to be more enthusiastically received than was deemed possible.

"Discussion of Oil Burning in a Ceramic Plant," by R. I. Clare, Federal Terra Cotta Company, Woodbridge, was the next paper, a technical discussion of how best to install an oil burning apparatus and how to operate it most economically.

"Fuel Analysis," by A. C. Fieldner, supervising chemist, Bureau of Mines Experiment Station, Pittsburgh, was the next paper, and valuable data concerning fuels was given. The discussion which followed showed how closely the members of the association have studied this phase of their busness.

The last paper was "Discussion of a New Type of Producer-Gas Fire Box," by R. H. Minton, General Ceramics Company, Metuchen, N. J.

As has been said, the attendance was large and the meeting was enthusiastic. Where a year ago it was devoted largely to the discussion of war-time subjects, such as economies in the use of fuel and transportation and how best to operate its plants with few men, this year the war was forgotten and the look was forward to that larger and better business which is coming with reconstruction and the fresh development which is to come as a result of the ending of the war.

The following were present:

G. H. Brown, Rutgers College, New Brunswick, N. J.
Homer F. Staley, Bureau of Standards, Washington, D. C.
Edward C. Stover, The Trenton Potteries Co., Trenton, N. J.
Andrew Foltz, Lambertville Pottery, Lambertville, N. J.
Theo. Harburt, Lambertville Pottery, Lambertville, N. J.
Chas. T. H. Phillips, Sneyd Enameled Brick Co., Trenton, N. J.
Louis Pohle, Monument Pottery Co., Trenton, N. J.
Francis Burroughs, Star Porcelain Co., Trenton, N. J.
William Bedson, Elite Pottery, Trenton, N. J.
Joseph Boughey, Trenton, N. J., Chas. Engelhardt Co., 30 Church St., New York.
O. O. Bowman, 2nd, I. L. Mott Co., Trenton, N. J.
Albert C. Edgar, Metuchen, N. J.
C. S. Maddock, Jr., Thos. Maddock's Sons Co., Trenton, N. J.
Ramsey Bedson, Elite Pottery, Trenton, N. J.
G. A. Williams, Atlantic Terra Cotta Co., Tottenville, L. I., N. Y.
Wm. Dinwiddie, Metuchen, N. J.
O. E. Mathiasen, Keyport, N. J.
August Staudt, Perth Amboy Tile Wks., Perth Amboy, N. J.
Abel Hansen, Fords Porcelain Wks., Perth Amboy, N. J.
Charles A. Bloomfield, Metuchen, N. J.
F. S. Thompson, Ceramic Dept. Rutgers Col., New Brunswick, N. J.
L. T. Richardson, New Brunswick, N. J.
M. M. McHose, McHose Clay Co., Perth Amboy, N. J.
Chas. Howell Cook, Cook Pottery Co., Trenton, N. J.
F. B. Allen, M. D. Valentine and Bro. Co., Woodbridge, N. J.
John H. Leisen, Woodbridge, N. J.
Wm. M. Shakespeare, T. A. Edison, Inc., Bloomfield, N. J.
Charles W. Crane, C, W. Crane and Co., 17 Battery Pl., N. Y. City.
Fred A. Whitaker, General Ceramics Co., Keasbey, N. J.
G. M. Tucker, N. Y. Architectural Terra Cotta Co., L. I. City, N. Y.
Wm. Schultz, Didier-March Co., Keaskey, N. J.
Paul C. Buechner, Crossman Co., South Amboy, N. J.
Jos. L. Buckley, Ceramic Equipment Co., Trenton, N. J.
Leslie Brown, Lenox, Inc., Trenton, N. J.
John B. Maddock, Jr., John Maddock and Sons, Trenton, N. J.
E. C. Hill, Conkling-Armstrong Terra Cotta Co., Philadelphia, Pa.
S. O. Conkling, Conkling-Armstrong Terra Cotta Co., Philadelphia.
Henry B. Kummel, State Geologist, Trenton, N. J.
Daniel P. Forst, Robertson Art Tile Co., Trenton, N. J.
Stephen E. Meagher, Trenton, N. J.
R. H. Minton, General Ceramics Co., Metuchen, N. J.
R. I. Clare, Federal Terre Cotta Co., Perth Amboy, N. J.
Chas. H. DeVoe, Old Bridge Enam. Br. & Tile Co., Old Bridge, N. J.
Robert Hazelhurst, Old Bridge Enam. B. & T. Co., Old Bridge, N. J.
Herbert W. Moore, Atlantic Terra Cotta Co., Perth Amboy, N. J.
H. J. Knollman, Abrasive Co., Philadelphia, Pa.
W. S. Herman, Abrasive Co., Philadelphia, Pa.
H. Schmidt, Roessler and Hasslacher Chem. Co., New York City.
Wm. F. Kerr, Roessler and Hasslacher Chem. Co., New York City.
C. J. Hudson, Norton Co., Worcester, Mass.
Robert S. Finney, 142 W. 80th St., New York City.
A. C. Fieldner, Bureau of Mines, Pittsburgh, Pa.
Douglas J. Fisher, Sayre and Fisher, Sayreville, N. J.
B. M. Fisher, Sayre and Fisher, Sayreville, N. J.
G. Rupp, Sayre and Fisher, Sayreville, N. J.
Chr. Mathiasen, South Amboy Terra Cotta Co., South Amboy, N. J.
Frank D. Holmes, Thomas Maddock's Sons Co., Trenton, N. J.
A. Zakharoff, 6 Hanover St., New York City.
R. B. McCafferty, Brown Instrument Co., 50 Church St., N. Y. City.
J. H. Ryan, The Mutton Hollow Fire Brick Co., Woodbridge, N. J.
R. P. Grace, The Mutton Hollow Fire Brick Co., Woodbridge, N. J.
Eric C. Turner, Cook Pottery Co., Trenton, N. J.
R. S. Barlow, Roessler and Hasslacher Chem. Co., N. Y. City.
L. E. Riddle, Jr., Edgar Bros. Co., Metuchen, N. J.
I. R. Edgar, Lake Co. Clay Co., Metuchen, N. J.
D. H. Applegate, Jr., Phila. Textile Mch'y Co., Philadelphia, Pa.
George Simcoe, Electrical Porcelain Co., Trenton, N. J.
Washington Holt, Trenton, N. J.
M. F. Nagle, South Amboy Terra Cotta Co., South Amboy, N. J.
D. Raymond Edgar, Edgar Bros. Co., Metuchen, N. J.
L. R. W. Allison, Newark, N. J.
C. T. Parks, International Clay Machinery Co., Dayton, Ohio.

THE FIRE BRICK OUTLOOK.

The fire brick industry depends for a great measure of its market field upon the metal work industry. Naturally therefore since the war ended, and especially since strikes have curtailed production among the steel industries, the demand for fire brick has been reduced considerably in volume. This seems to be a temporary, and probably a needed chance is given the fire brick plants to catch up a little with their work. In the main they have been overcrowded for several years and a little relaxation of the tension should be wholesome. The general outlook ahead for the fire brick is good. There is in sight a need for heavy metal production for several years, there is an enlarged call for the navy, and in many other lines requirements will be increasing, so that on the whole the outlook is for good times ahead of the fire brick business and for plenty of work to keep all the industry busy.

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we again inaugurate a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

QUESTION: What is the proper way to start the fires in down-draft kilns with more than one stack or with multiple stacks?

Answer: Push the dampers closed in each stack and then pull out about an inch and start the fires burning. Let the kiln fill itself with the product of the fires, with smoke, until it comes out of the peepholes, then in about an hour, pull each damper out gradually, an inch at a time, every 15 minutes and when the chimneys have full draft, there should be a uniform drawing in all stacks alike.

QUESTION: What can be done, if some of the chimneys draw more than others?

Answer: Push the dampers in nearly closed in those chimneys that draw more. That will drive the heat to the chimneys with sluggish draft and by careful manipulation of the dampers, the kiln soon will have a uniform draft in all the chimneys.

QUESTION: What can be done, if some of the chimneys do not draw at all?

Answer: Cover these chimneys with a sheet iron on top and in about an hour gradually take the sheet irons off, and if that does not correct the trouble, take some real greasy waste and drop that waste down the chimneys, after lighting the waste and the flame shooting out of the top of the chimneys will heat the air in the chimneys and start the draft without fail.

QUESTION: What is the cause of some fires repulsing, that is when the flames come back out of the fireholes, instead of drawing into the kiln?

Answer: The cause of this is often damp brick set in some parts of the kilns, or too heavy firing with bituminous coal during watersmoking, or if the firemen stir up the fires too much, especially when coal is used that cakes, causing soot. Such coal should be lifted up lightly to give a little air.

QUESTION: What can be done to make repulsing fires draw into the kiln?

Answer: Do not fire the fireholes that back out, but fire all the rest and if you have cooling holes in the crown, open them right directly over the fireholes and begin to fire the repulsing fireholes light and the fires will draw in. In a few hours, cover up the crownholes and in most cases the fires will draw into the kiln. If this method should fail, throw cold water on the bagwall with a small can. This will generate steam, pop out of the firehole for an instant and then draw heat in. To get the water in the most effective way to the hot bagwall, use a syringe or a hose with a nozzle, if you have any water connections around the kilns.

QUESTION: What can be done, if a kiln gets sooted, so all the fires burn backwards?

Answer: In the first place any down-draft kiln with a single outside stack or three or four kilns with a large stack, partitioned off to the top, should have a small furnace for each flue of the stack. The object of having such a furnace is to start a fire at the beginning of the watersmoking and so heat the cold stackflue. By this method a kiln never will get sooted, as the moisture generated in the kiln will pass rapidly through the stack and the soot will have no chance to accumulate on the ware in the kiln, the ware drying out quicker without the condensation dampening the bottom courses. If such a kiln through any cause should become sooted at any stage of water smoking or oxidation, it's caused by unexcusable carelessness of the firemen.

QUESTION: What can be done if a kiln that has no such furnace at the stack, gets sooted?

Answer: Open the centerhole in the crown and if there are any sideholes, open them too. Cut up a lot of dry scrap wood, drop damper at the stack, take manhole plate off and build a fire at the bottom of the manhole and keep the fire up for an hour or two. This will heat up the stack flue and the bottom of the kiln and then when reversing the draft by pulling the damper up and covering the manhole plate, the kiln will draw and then gradually close up the holes in the crown.

QUESTION: I am located in Eastern Iowa, and am looking for some white burning clay to use in the manufacture of clay smoking pipes. Can you give me some information that will enable me to find some within easy shipping distance?

Answer: A number of Iowa fire clays are quite plastic and if properly prepared likely could be used for pipes. Pipe clays are very plastic, fine grained and soft. One might say they are like ball clays, but differ from ball clays in that they are not sticky and they dry safely. There are some excellent soft clays in the flood plain district of Illinois and among them a pipe clay could likely be found or be prepared. The French Refractory Clay Co., Effingham, Ill., prepares a Mississippi clay which probably could be used for pipes. The Western Stoneware Company of Monmouth, Ill., may also be able to furnish clay suitable for the manufacture of clay pipes. If this clay is not as white as desired, it could be mixed with a clay from East Liverpool, Ohio.

QUESTION: We have been having some trouble with scum on our brick. Are sending you a couple by parcel post, and hope you can suggest a remedy.

Answer: The bricks sent show two very interesting types of scum.

The side cut brick has every indication of being scummed by the oil used in the cutter of the stiff mud machine.

The end cut bricks have a peculiar scum which I have experienced only a few times. It is entirely different from the scum on the side cut brick but like the latter it does not come from the clay. It is readily soluble and once thoroughly washed off, does not return. It is therefore not ordinary dryer scum. I venture the statement that in the piles it comes and goes with varying weather conditions where the coating is not excessively heavy, and also I conjecture that when the kiln is first open and still hot that it does not show but appears as the bricks cool down.

It is a long guess to explain its cause, but in the few times I have experienced it, the cause was due to wet sulphurous coal from an old mine working, pillar coal which had been exposed to the atmosphere for years before being finally worked up and put into use.

The trouble does not come from the clay but it is a salt deposited on the portions of the bricks exposed to the kiln flame, and the salt is deliquescent. On a damp day it will become less and entirely disappear where it is not excessive, only to re-appear in dry weather. I am curious to know whether it behaves in this instance as in the other few instances where I have observed it. I would be very much interested in having a full history of it, and an account of how it comes, when it comes, and how it behaves.

CAREY P. ELLIS.

CHIMNEY TOLL.

ONE of the big losses that comes to the steam products is the Chimney Toll. This is the heat that goes up the stack which should have been used in making steam.

With proper furnace conditions and cleaner tubes this loss will be a minimum, but with the tubes thoroughly coated with a high insulating substance (soot) this toll is greatly increased.

For example, one ton of coal will use about 36,000 pounds of air to burn it. Now with clean tubes and proper damper regulation, the stack temperature will be about 550 degrees. With dirty tubes, this will increase to 700 degrees or more—this is a 150-degree increase in the stock temperature. At one-fourth heat unit per pound of air for each degree's increase in the temperature, it will require 1,350,000 heat units or about 100 pounds of coal or a 5 per cent. loss—which is a pretty high toll.

The Marion line of Mechanical Soot Blowers for Water Tube and Tubular boilers manufactured by the Marion Machine Foundry & Supply Co., Marion, Ind., are permanent installations on the boiler, and designed to keep the soot off by frequent use, so that the tubes are always clean.

They can be used at any time, and the tubes all cleaned from two to five minutes, which is less time than is needed to get lance blower ready to use.

Not only this, but it is a clean job. No soot flying all over the boiler room.

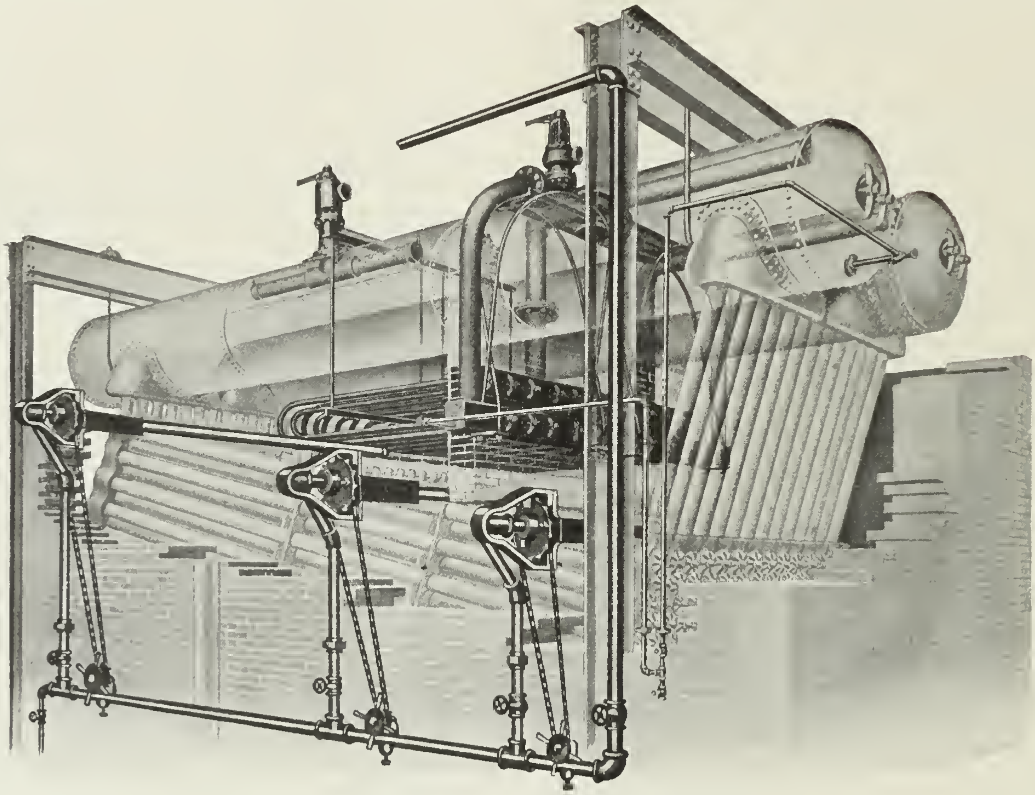
Also, it is economical in the use of steam as every bit of steam is cleaning tubes and the whole equipment is in use an extremely short time.

The Marion Planet for Water Tube Boilers and the Marion Duplex for return tubular boilers, are fitted with patented internal welded nozzle.

The Internal Welded Nozzle is an internal part of the blowing element ,and is fully protected from the action of the hot gases. In this way the opening remains in proper working order, and is not fused shut or distorted in any way.

The Marion Hand Wheel Control for operating the blowers is a very essential part of the equipment. By the use of the Hand Wheel and reduced chain drive, the blower elements are easily and positively rotated at the proper speed for effective cleaning. No spots are missed, because the chain jump off or the blower stuck and had to be jerked loose.

Stops are provided for limiting the rotation of the element, so that baffles will not be cut out, and there is also an indicator to show just where the blower is cleaning.



The Marion Planet for Water Tube Boilers.

TESTS ON HEAT INSULATING MATERIALS.

Bulletin No. 130 of the Bureau of Standards, Department of Commerce, prepared by Walter A. Hull, contains a comparison of the heat insulating properties of some of the materials used in fire resistive construction. In summing up the investigations in this report Mr. Hull says:

"Perhaps the most significant indication shown by the clay specimens is the wide difference in the rates at which temperature progress took place in the different clay cylinders. There is strong evidence here of the superior insulating value of the porous burned clay over that which is denser. Since it is largely a matter of thermal conductivity, in the case of the clays, and since the showing is entirely consistent with the existing data as to the thermal conductivity of burned clays, it seems reasonable to expect that porous-clay wares will give better thermal protection, other things being equal, than denser ones, and it would seem advisable that more general recognition be given to this quality in specifications for fire protective coverings of burned clay. Special experimental work on the relative efficiencies of such coverings, comparing the denser with the more porous coverings, would be necessary in order to determine how far such specifications should be carried. It seems reasonable to predict, however, that such an investigation, by bringing out quantitatively the effect of different degrees of porosity on the efficiency of the actual coverings built up from actual structural units, hollow or solid, protecting actual steel members, would bring out information which would eventually make such protection more reliable and more economical than it usually is now, when no definite specifications as to porosity are in effect."

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.

HAVING PASSED through a year of unusual activity during the past twelve months in the face of such obstacles of labor, fuel and car shortage, manufacturers of clay products in Wisconsin are most optimistic in their views as to what the coming season has in store for them. Jobbers and dealers express a similarly favorable attitude on the matter, which leaves but little chance of doubting that the new year can be anything but most successful for the clay industry of this state. With the winter season at hand and operations hindered more or less by the weather conditions accompanying this time of the year, the clay products industry of the Badger state is now passing through its annual slow-up. However, men of the industry are not sitting idle in face of most excellent prospects of the biggest year in history for 1920. Plans are being made to handle the vast volume of business which will result with the resumption of building and construction operations as soon as the cold weather lets up and snow and ice disappear. In the meanwhile there is a slow movement of material which is being used in the construction of work whenever the weather is favorable or on such jobs where protection is afforded or can be secured.

The Whitewater Brick and Tile Company, which operates a modern plant at Whitewater, Wis., has discontinued brick making for the time being after a most successful run through the summer and fall. It had been hoped to keep up manufacturing operations well into the winter because of the insistent demand for brick and tile, but the fuel shortage and obstacles following prevented Manager Steir from carrying out his original intentions, and the plant will remain closed until spring. The activities of the Vesper Clay Products Company, of Vesper, Wis., were continued somewhat longer than usual this season. Several kilns of brick and tile that had been made ready for burning were delayed by the fuel shortage. Due to insufficient stock to meet current orders, it was necessary to finish the kilns, which was done as soon as it was possible to secure fuel for the purpose.

Incorporation papers have been filed by the Beloit Brick Company, of Beloit, Wis., which is capitalized at $25,000. The men interested in the new organization and signing the articles of incorporation are George E. W. Marsden, C. Hendley and W. H. Wheeler. The company will engage in the manufacturing of brick and kindred products.

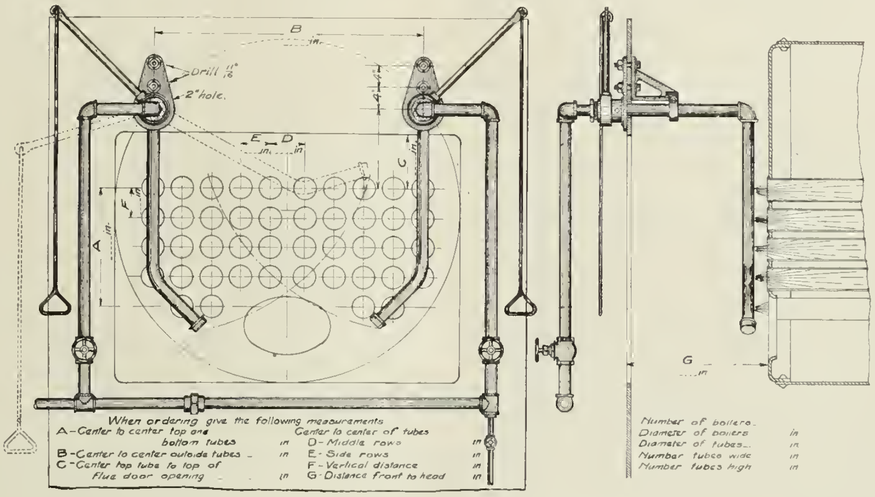
C. H. Schmiers, secretary and treasurer of the Kewaunee Clay Products Co., Kewaunee, Wis., recently made an extensive automobile tour through Wisconsin. Mr. Schmiers combined business with pleasure, calling on personal friends as well as business associates in Whitewater, Milwaukee and other points.

The North Western brick yard at Stanley, Wis., has closed a most successful season in marketing its "Stanley Brick" at home as well as in surrounding territory. The production during the past year reached four million brick, which is by far greater than the average, and the largest output during the past twelve years. During the months of October and November the plant shipped on an average of a million brick a month. The shipping was continued through December and this month as well, in order to fill contracts with builders and contractors in a large trade territory. Two of the largest contracts at Stanley were supplied by the North Western company during the year, its products having been used to construct both the large factories of the Dependable Baggage Co. and the Stanley Toy Works. The coming building season promises greatly increased building activities in Stanley, and, because of the high cost of lumber, many new homes will be made of Stanley brick.

The Shope Brick Company of Wisconsin has been incorporated at Milwaukee to own and hold inventions and patent rights. The capital stock is placed at $25,000 and the incorporators are: Robert J. Barth, E. G. Brown and R. Witte.

At the annual convention of the Wisconsin Municipal Contractors' Association, held in Milwaukee early in January, matters appertaining to municipal construction were considered and discussed. Plans for 400 miles of paving were submitted to the contractors as a portion of their work for the year. According to Fred J. Deutsche, executive secretary, the coming year will show a large increase in paving work if enough freight cars and labor can be secured. The president of the association is George Welch, Beloit, Wis., and Robert McGucken, of Milwaukee, was elected secretary. A large number of schools and other public buildings will be erected in Wisconsin this summer, while sewer work will also be pushed, and create a demand for clay products.

A. BADGER.



B
in.
Drill ⅛"
2" hole.
E
D
in.
in.
C
A
F
G
in
When ordering give the following measurements
A-Center to center top and bottom tubes ... in
B-Center to center outside tubes ... in
C-Center top tube to top of Flue door opening ... in
Center to center of tubes
D-Middle rows ... in
E-Side rows ... in
F-Vertical distance ... in
G-Distance front to head ... in
Number of boilers
Diameter of boilers ... in
Diameter of tubes ... in
Number tubes wide ... in
Number tubes high ... in

The Marion Internal Welded Nozzle.

Written for The Clay-Worker.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.

THINGS ARE picking up considerably in the building lines in Evansville and southern Indiana, and indications point to a great deal more building in 1920 than during the previous year. It is expected that both commercial and residence buildings will show a big gain over 1919. A home building corporation, sponsored by the Chamber of Commerce, is being formed in Evansville, and in addition to the Chamber of Commerce the Evansville Manufacturers' Association and the Evansville Real Estate Exchange are back of the proposition. It is expected that the capital stock of the corporation will be one million dollars, and plans now are being worked out by a special committee, of which Henry C. Kleymeyer, manager of the Standard Brick Manufacturing Co., is the chairman. Mr. Kleymeyer said the committee had no certain knowledge of the number of houses needed in Evansville at the present time, but the committee wants to see the demand supplied. "We do not intend that the corporation shall build any houses on its own account," said Mr. Kleymeyer, "but we intend to loan money on easy terms to those who desire to build houses, to contractors, individuals and real estate men. We intend to make the loans on a six percent basis. I do not know what the individual shares of stock will be worth, as most of the details of the proposed corporation remain to be worked out. While we expect the manufacturers and retail merchants to take most of the stock, every public-spirited citizen who has money will be invited to subscribe." It probably will be thirty days before the corporation would be ready to loan money, but he believes it will be ready by the time the weather is favorable to building.

Plans have been drawn, or will be drawn soon, for a number of new buildings in Evansville this year. Hadi Temple, Ancient and Arabic Order of the Nobles of the Mystic Shrine, has purchased a site across the street from the Scottish Rite Cathedral at Evansville, and it is the intention of the shrine to erect a temple with a theatre attached on the order of the Murat Temple at Indianapolis. Plans now are being drawn for the new temple. The Victory Theatre, that will cost in the neighborhood of $750,000, will be built during the year at the corner of Main and Sixth streets, Evansville. The first unit of the Monitor Furniture Co. is now under construction, and the company will invest something like a million dollars in buildings.

Numerous new homes are being planned by Evansville families that will range from $2,000 cottages to $10,000 and $15,000 bungalows. Three fireproof buildings for the Evansville Paint and Varnish Co. will be built at a cost of $30,000. The congregation of the First Baptist church will build a new edifice that will cost about $100,000. A fifty-room addition will be built to the Deaconess Hospital, at a cost of $100,000. Improvements also will be made at St. Mary's hospital. Many large factories at Evansville are building additions or either planning to do so, and indications point to 1920 being the greatest year on record for factory building, and because of these numerous buildings to be erected John Andres, as secretary of the Standard Brick Manufacturing Co., is of the opinion that the demand for brick and other building materials will be the greatest in many years. Mr. Andres also expects his company to be called upon to furnish the brick for many buildings in other towns in southern Indiana as well as in southern Illinois and western and northern Kentucky.

The will of the late George M. Uhl, of the Uhl Pottery Co. at Evansville, was filed a few days ago for probate. It left all the property of the deceased to the widow, Mrs. Ollie Uhl, as long as she remains unmarried. In the event that she remarries all the estate except one-third is to go to the three children. Mrs. Uhl has died since the will was filed and the property will all go to the children. Mr. Uhl was one of the best known pottery manufacturers in southern Indiana.

The Veedersburg Brick Co. at Veedersburg, Ind., has increased its capital stock from $50,000 to $80,000.

Aaron M. Weil, of the Crown Pottery Co. at Evansville; Michael D. Helfrich, another pottery manufacturer, and Henry C. Kleymeyer and John Andres, of the Standard Brick Manufacturing Co., have been appointed to important committees in the Evansville Chamber of Commerce for the coming year. All these men take an active interest in affairs of the Chamber of Commerce, and they are public-spirited citizens.

John Andres, secretary of the Standard Brick Manufacturing Co., has been elected president of the city water works board at Evansville for the coming year. Mr. Andres has been a member of the water works board for a number of years and he has made a splendid official.

Gil C. Landgrebe, of the Huntingburg Pressed Brick Co. at Huntingburg, Ind., has been elected secretary of the Dubois County Fair Association, and the fair this year will be held some time in August at Huntingburg.

Brick and tile manufacturers in southern Indiana are no longer worried over the fuel shortage since the settlement of the miners' strike, but the car shortage is giving them some worry. The labor problem also is becoming a serious one, and many manufacturers report that it is next to impossible to get all the labor that they want. Some time ago the U. S. Brick Manufacturing Co. at Tell City, Ind., installed several girls in their plant, and they report that their work has been most satisfactory.

Plans are nearing completion for the building of the $50,000 brick plant at the corner of Lodge avenue and the Green River Road, Evansville, by a recently formed corporation, known as the Best Brick Co. Upon the completion of the new plant, about May 1, officers of the company say their output will be about 40,000 bricks daily. They will build six dry kilns, install the Underwood gas system for making their own gas for drying brick, and will have a heat dryer of 40,000 capacity. The firm will make mingled front brick gun metal, rugby and Cherry red brick, hollow building block tile and stain tile. Clarence E. Schutz, cigar and tobacco merchant, is the president of the new company and Walter P. Wood is secretary and treasurer.

RECENT APPOINTMENTS TO FACULTY OF ILLINOIS STATE UNIVERSITY.

The College of Engineering of the University of Illinois reports the following appointments of interest to clayworkers which have been made since the beginning of the academic year in September:

Enoch G. Bourne as Laboratory Demonstrator and Potter in the Department of Ceramic Engineering. Graduated from the School of Industrial Art at Trenton, New Jersey, in 1913; Instructor in the evening course in Ceramics at the School of Industrial Art 1913-17; has had twenty years' experience in pottery, having served as assistant superintendent in the New Cumberland plant of the Warwick China Company, of Wheeling, West Virginia, for several months before entering upon work at the University of Illinois.

Ezra Edward Bauer as Assistant in Highway Engineering in the Department of Civil Engineering. Graduated from the University of Illinois in 1919 with the degree of Bachelor of Science in Civil Engineering; engineer with the P. J. Kalman Company of Chicago, Illinois, from July 1, 1919, to October 1, 1919.

NEW YORK STATE SCHOOL HOLDS SHORT COURSE.

THE SHORT COURSE and meeting of the New York State Section of the American Ceramic Society, held at Alfred University December 15, 16 and 17, was a decided success from every point of view. The number in attendance was remarkable, considering the distance traveled, and the fact that the temperature ranged from near zero to 21 degrees below. There were fifteen men from every part of the state present. The enthusiasm was high, and it was felt that in addition to the pleasure of renewing old acquaintances much profit was derived by all present. The following program was carried out in full:

Monday, December 15.

Developments and Prospects in Ceramics, by C. F. Binns, New York State School of Clayworking and Ceramics, Alfred, New York.

Laboratory Demonstration of Deflocculation and Elutriation, by C. F. Binns, Alfred, N. Y.

Laboratory, Calorific Value of Coal, Fusion Point of Ash, and Specific Heat of Ceramic Products, by J. B. Shaw and G. A. Bole, Alfred, N. Y.

Reception by the Faculty at the home of Professor and Mrs. Binns.

Tuesday, December 16.

The Burning Process, A. V. Bleininger, Bureau of Standards, Pittsburgh, Pa.

Laboratory, Heat Balance of a Kiln and Burning Behavior of a Clay, by J. B. Shaw and G. A. Bole.

Porcelain, A. V. Bleininger, Bureau of Standards, Pittsburgh, Pa.

Laboratory, Slag Test of Fire Brick and Spalling Test, by J. B. Shaw and G. A. Bole.

Calibration of Electric Pyrometers, W. A. Titsworth, Professor of Physics, Alfred University, Alfred, N. Y.

Studio Demonstration, Making and Decoration of Pottery, by Elsie Binns and Marion Fosdick, Instructors in Art in Alfred University, Alfred, N. Y.

Reception by the Department of Applied Art.

Wednesday, December 17.

The Proctor Dryer, D. H. Applegate, Philadelphia Textile Machinery Co., Philadelphia, Pa.

The Tunnel Kiln, C. Dressler, New York City.

One Fire White Ware, C. F. Geiger, Carborundum Co., Niagara Falls.

Refractories for the Glass Industry, A. V. Bleininger, Bureau of Standards, Pittsburgh, Pa.

Electrical Porcelain, L. E. Barringer, General Electric Co., Schenectady, N. Y.

Those in attendance were:

G. W. Lapp, Lapp Insulator Co., LeRoy, N. Y.
O. A. Solwm, Jewettville Clay Products Co., Jewettville, New York.
M. Blodgett, R. Gustavino Co., New York City.
George F. Hasslacher, Roessler and Hasslacher Chemical Co., New York City.
Paul M. Dove, W. G. Dove & Son, Brick and Tile Plant, Geneva, N. Y.
D. H. Applegate, Philadelphia Machinery Co., Philadelphia, Pennsylvania.
James L. Jensen, Empire China Works, Brooklyn, N. Y.
Donald Ritschy, Empire China Works, Brooklyn, N. Y.
William Chell, Empire China Works, Brooklyn, N. Y.
E. W. Tillotson, Mellon Institute, Pittsburgh, Pa.
M. C. Gregory, Brick, Terra Cotta and Tile Co., Corning, New York.
C. F. Geiger, Carborundum Co., Niagara Falls, N. Y.
L. E. Barringer, General Electric Co., Schenectady, N. Y.
A. V. Bleininger, Bureau of Standards, Pittsburgh, Pa.
C. Dressler, American Dressler Tunnel Kiln Co., New York City.

A meeting of the publication committee of the American Ceramics Society was held at the home of Professor Binns on December 17th, at which much important business was transacted.

HOLIDAY GREETINGS AND CALENDAR SHOWER.

RILEY'S POEM about "The world is full of roses and the roses full of dew, and the dew is full of heavenly love that drips for me and you," expresses our feeling at this time of the year, when so many, many of our friends are sending their kindly and generous good wishes concerning the new year. Life is indeed worth the living with so many friends, and these reminders are like sweet roses strewn in our path. Space will not permit publication of the long list of individuals and firms who sent their felicitations in the form of cards, letters, telegrams, booklets and souvenirs, so we desire to take this means of thanking them collectively.

The calendar shower was like unto a summer rain. It was not heavy, but refreshing, and as a result the walls of our sanctum sanctorium are bedecked with beautiful, useful mementoes. Particularly do we wish to mention the calendar of the O. Zimbal Brick Co., of Sheboygan, Wis., the poster being a large, beautifully colored picture, entitled "A Mother's Blessing." "Russet Oaks" was the name of the attractive picture on the large practical calendar of the Tuttle Brick Co., "Brickmakers Since 1842," of Middletown, Conn. H. A. Wheeler, E., M., of St. Louis, sent us a calendar illustrated with a picture of a litter of happy, panting puppies. The George H. Clippert & Brother Brick Company's calendar had a large pad on a brick wall with a view of their plant at Detroit, Mich., below. The Roessler-Hasslacher Chemical Company, New York, has a most attractive calendar, ceramic in every sense of the word, the picture showing a Grecian artist decorating a large vase, having for his model a Grecian beauty. The calendar of C. K. Williams & Co., Easton, Pa., advertises their "Anchor" brand of dry colors and fillers. The E. M. Freese & Co., manufacturers of brick, tile and fireproofing machinery at Galion, Ohio, has a calendar in black and white which is very conspicuous and at the same time practical. The calendar of the Ball Engine Co., Erie, Pa., was most elaborate, containing thirteen sheets in various tints, each showing illustrations and descriptive matter relative to the Erie revolving shovels and locomotive cranes, and giving the calendars of the past, present and future month. Those of J. C. Steele & Sons Co., manufacturers of New South brick machinery, Statesville, N. C., and the Watts Mining Car Wheel Co. were large wall calendars in red and black, with individual sheets for each month. The former showed illustrations of their brick machine and cutting table, while the latter gives views of their cars and plant.

Any reader of The Clay-Worker desiring any of these fine calendars will probably be favored on receipt of request by the particular firms whose offering is wanted.

The Bonnot Co., Canton, Ohio, favored us with a fine leather-bound memo book, which, in addition to the diary feature, contains in tabular form a fund of information on postage rates, measures and weights, population of cities, etc., etc. Also some information relative to the Bonnot hollow-tile, brick and other clayworking machinery. See ad on page 3 of this issue.

REFRACTORIES

THE REFRACTORIES INDUSTRY IN 1919.

DURING THE WAR there was such an unusual call for refractories that it was almost impossible to meet the demand for any but the lower grades. And to do this it was not only necessary to replace the miners and plant men who had entered the service, but also to increase the entire personnel of most refractories manufacturing plants. This, without doubt, had its effect upon the quality of the material produced; it was impossible to get quantity production and maintain quality with such depleted forces. Since the beginning of the armistice, however, fewer by-product coke ovens have been constructed; the production of metal has diminished; contemplated construction has been discontinued. The effect of this shortening of the demand for refractories has made itself noticeable in many ways—notably in workmanship. A representative of a large foreign steel plant made the remark in an American brick plant during November, 1919, that the silica brick in the cull pile were as good as he bought for run-of-kiln in his own country.

Plant conditions in the refractories industry have been improved during 1919—in several instances construction work and machine installation begun in 1914 and then discontinued was completed in 1919.

The Research Fellowship established by the Refractories Manufacturers Association entered its third year in May. This feature of the work of the association has grown to a point where the corps of "Fellows" has been increased and the laboratory space in the Mellon Institute extended. More than a thousand investigations of clay, both raw and calcined, have been made, as well as tests on finished material. Many investments fore-doomed to failure have been prevented. Many improvements in finished material have been suggested and instructions given as to the manner in which this improvement could be made. These improvements have not only had to do with the addition of missing ingredients and the changing of proportions of mix, but with mechanical features, the effect of which has meant much, not only for the make of refractories, but for the user of this class of material.

Considerable progress has been made in the way of standardizing the product, not only as regards size and shape, but quality and methods of testing to determine quality. The Committee on Standardization, connected with the Refractories Manufacturers Association, has, by constant investigation of conditions in the various industries where refractories are used, made a gradual reduction of the special shapes that were at one time used in general practice in these industries. The substitution of standard shapes has, in many instances, greatly reduced the cost to the consumer and at the same time made prompt and efficient service much easier for the refactories manufacturer.

Comparatively few new refractories plants have been started during the past year and the output has been lessened by the going back into old lines, of the clayworking plants which took up fire brick as an emergency measure when the Fuel Administration curtailed the fuel supply of all building brick plants. The enormous stocks accumulated by some of these newcomers in the refractories field have since been sold—for the most part at less than cost of production.

On the whole, the industry has had a profitable year—the profit, perhaps, being more along the lines of improved product and better understanding with consumers than in a monetary way. The excess profit tax will not bother nearly so many refractories manufacturers in the early part of 1920 as it did the same companies in the early part of 1919.

REFRACTORY OXIDES. FACTORS ON WHICH PROGRESS DEPENDS.

IN ALL PROBABILITY, progress in refractory materials must depend on two principal factors:

(1) The control of the purity of the materials used, and (2) the accurate control of high temperatures. In this connection the following facts are well worth the attention of all manufacturers of refractory goods:

Silica has two melting points, one when it is in the form of quartz, which melts at 1,470 deg. C., and the other when it is the form of cristobalite at 1,625 deg. C. Silica changes more or less slowly into various forms according to the temperature. Thus, quartz has a reversible inversion at 575 deg. C., tridymite has inversions at 117 and 163 deg. C. and cristobalite has an inversion range of 200-275 deg. C. depending on the previous history of the crystal. By heating it rapidly, quartz can be melted before it has had time to invert into one of the less fusible forms of silica; this explains its lower melting point when rapidly heated.

Alumina occurs in two crystalline forms, the first being the same as corundum, and a second found in abrasive wheels. The first form melts at 2,050 deg. C.

Magnesia occurs in only one crystalline form (periclase), which has the highest melting point of any of the refractory oxides, namely 2,800 deg. C.

Lime is only known in one crystalline form at high temperature, but it seems to have an inversion point at 420 deg. C., though little is known of it. There is a porous form of pure lime, which is much more reactive than the crystalline one.

Iron oxides are three in number, with the formulas FeO, Fe_2O_3, and Fe_3O_4. The properties of FeO are practically unknown. Fe_2O_3—the red oxide—on heating dissociates into oxygen and a solution of Fe_3O_4 in Fe_2O_3 and finally if the heating is sufficiently prolonged, into Fe_3O_4. The last-named can, in its turn, dissociate into oxygen and a mixture of oxides of interdeterminate compositions.

A study of the products formed by heating these refractory oxides in groups of two or three at a time suggests that all the stable compounds they form with each other contain these oxides in simple molecular proportions, the ratios being usually 1:1 or 1:2, as shown in the following table, which shows the stable binary compounds:

System	Compound	Mineral Name	Ratio of Oxides
$SiO_2—Al_2O_3$	Al_2SiO_3	Sillimanite	1:1
SiO_2MgO	Mg_2SiO_4	Forsterite	2:1
$SiO_2—CaO$	$CaSiO_3$	Wollastonite	1:1
	$CaSio_4$	Wollastonite	2:1
Al_2O_3CaO	$CaAl_2O_4$	Spinel	1:1
	$Ca_3Al_{10}O_{18}$	Spinel	3:5
	$Ca_5Al_6O_{14}$	Spinel	5:3
Al_2O_3MgO	$MgAl_2O_4$	Spinel	1:1
$Fe_2O_3—FeO$	Fe_3O_4	Magnetite	1:1

Similar results are obtained with the compounds, such as the felspars. These simple ratios suggest the existence of "molecular compounds," which readily dissociate when the crystals are melted and only form again when the cooling of the molten mass is so slow that it does not form a vitrified mass or glass but crystallizes definitely.

Another fact of importance to the manufacturer of refractory materials is the identity of the maximum melting points of all mixtures of the refractory oxides taken two or three at a time with the melting points of pure oxides, so that the addition of any other substance to either lime or magnesia will reduce its heat resistance. Hence, the necessity of using the purest materials.

Kaolin or clay is dissociated on heating into a compound Al_2SiO_3 and free silica, and this mixture melts at a lower temperature than free silica; that is, below 1,625 deg. C. By adding more alumina, however, the free silica will be combined so that the final burned mixture consists wholly of Al_2SiO_3, and will not melt below 1,815 deg. C.

Any finely powdered substance, which is kept for a sufficiently long time at a temperature just below its melting point, will sinter more or less solidly, so that there is no reason why a pure oxide should not be made into a dense and hard refractory material without the aid of any bond, if the temperature is sufficiently under control.

Spinel, $MgOAl_2O_3$ has an unusually high melting point, and as it can be made by heating a finely ground mixture of alumina and magnesia, it offers great possibilities as a high grade refractory material. The mixtures of alumina and magnesia which have the lowest melting points, melt at 1,925 and 2,030 deg. C., whilst the spinel itself need not, therefore, be made in exact composition so long as only magnesia and alumina are present, small amounts of other impurities may seriously reduce its value.

Crystallized alumina is used by hundreds of tons for the manufacture of abrasive wheels, and one use of this fused alumina is well known by the trade name "alundum." This should form the basis of a whole range of refractory materials.

SOUTHERN BRICK MEN BELIEVE IN PUBLICITY.

We are indebted to our good friend George O. Berry, of Columbus, Ga., for a copy of the special number of the Industrial Index, an unusually live trade paper published at Columbus, Ga. This particular issue is devoted to the industrial growth of Columbus during 1919, and contains much of interest. Among the illustrations we find many fine brick buildings and residences, as well as general views of the various brick plants of Columbus, including Mr. Berry's, the Bickerstaff Brick Co. and the Columbus Brick & Tile Co., formerly known as Shepherd Bros. An evidence that the brick and other clayworking firms of that section appreciate the advertising qualities of the Industrial Index is the fact that ads of nearly all of them are found in this closing number of 1919.

THE LIME MEN ARE AT IT.

The National Lime Association, with headquarters at Washington, D. C., has gone at the matter of promoting a wider interest in and a larger use of lime in a manner that holds interest to the brick trade, because of the fact that brick and tile manufacturers have the same opportunities before them. The lime people have arranged for speakers to appear at various state and regional associations of retail lumber dealers to discourse on the use and the sale of lime for agricultural purposes as well as for structural uses. The idea they are working on is that since the retail dealer, especially in the smaller towns and cities, handles lime for building purposes, he is the logical man to exploit lime for agricultural purposes and thus enlarge the volume of trade as well as build up a bigger business in the lime industry. This is something of an object lesson to the brick and tile manufacturers, for they too might well be enlarging their trade connections by cultivating the acquaintance of more retail lumber dealers with a view to enlisting them as active agents for the sale of brick, hollow building tile, drain tile, sewer pipe, etc. This is a line of argument The Clay-Worker has been plugging at for some time, and expects to continue working upon for the good of the industry.

THE POORLY PAID COLLEGE GRADUATE.

We are in receipt of announcement from the University of Illinois of conditions of appointment to research graduate assistantships maintained by the Engineering Experiment Station of the University. There will be eight vacancies to be filled at the close of the current academic year, and it seems that because of existing conditions and the inadequacy of the stipend they are having great difficulty in securing competent men for these positions.

This is a situation which merits the earnest attention of every business man in the country. There has never been a time in the history of our industrial development when there was more need for research activities, and here we are face to face with a condition in which college graduates qualified for work of this kind are so poorly paid in comparison with pay pulled down by common and skilled labor that the ranks of those in scientific efforts are likely to be sadly depleted in the future.

Dean Richards, of the University of Illinois, says that they hope that they may be able to secure a small increase in the stipend for the assistants but this may not be possible for the next academic year. In a word they are making the best they can of the situation, and it is a condition which is up to the business men of the country to furnish a remedy for some way or other. Not only is there urgent need for research work in the clayworking industry an dkindred lines but everywhere all around us science is being called into play more actively and earnestly than ever before and at the same time proper remuneration for the man of science is being so neglected that there is very little encouragement to qualify for work of this kind. This is a condition which must not be allowed to continue to the point of depleting the ranks of our scientifically trained men.

OFFICIAL ANNOUNCEMENT.

The Thirty-Fourth Annual Convention of the National Brick Manufacturers' Association and Allied Organizations to Be Held at the Deshler Hotel, Columbus, Ohio, Feb. 16-21, 1920.

A Meeting of the Common Brick Association of America Will Be Held in Conjunction With the N. B. M. A. and Other Affiliated Associations.

AS PREVIOUSLY ANNOUNCED, the thirty-fourth annual meeting of the National Brick Manufacturers' Association will be held at Columbus, Ohio, February 16 to 21, 1920. Unexcelled facilities are afforded for all the various meetings, and the cordial co-operation of the officials of the Ohio State University insures the helpful influence of that great educational institution. There will be a special trip through the University Thursday afternoon, when the delegates will be shown the various laboratories, engineering departments and equipment for experimental work and educational development. The Department of Ceramics will be visited, and under the direction of Professors Watts, Stull, Harrop, Garve and their associates a personally conducted tour will be made through the University buildings, of particular interest to clayworkers.

Hotel Deshler Headquarters.

The sessions of the convention will be held in the Hotel Deshler, which will be headquarters during the week. It is an up-to-date hotel, practically every guest room has a bath. The rates range from $2.50 up, per guest, on the European plan. The Deshler is the home of the Rotary and Kiwanis clubs. The first meets on Tuesday and the second on Wednesday. Its slogan is service. There is a quick service grill in the basement and a spacious dining room adjoining, where an excellent orchestra furnishes popular music, and dancing is enjoyed by those so disposed. The main lobby is spacious and luxuriously appointed. The guest rooms are attractive. Each has running ice water and every other modern convenience; tidiness prevails in every department. There is a smoking room on the main floor, where a light luncheon is served at noon, and the gentlemen can enjoy button-hole talks and a good cigar and soft drinks between sessions.

The convention hall is elegant. It is on the mezzanine floor, and adjacent thereto are the reception and registration rooms, where executive officers and committees will find every convenience for the business of the convention. The Deshler is in the heart of the city, is diagonally across from the Capitol building, the illuminated dome of which is a beacon of unusual charm and brilliance.

The machinery and supply dealers will rendezvous on the third floor, which is but a short flight above the mezzanine floor, and can be reached by the elevators, which are speedy and comfortable, handling large crowds with remarkable rapidity. In brief, the Deshler is an ideal convention hotel.

Meeting of Affiliated Associations.

The Common Brick Manufacturers' Association of America will meet in the main convention hall Monday, Tuesday and Wednesday forenoon. Further announcement, program, etc., will be found in another column.

The National Brick Manufacturers' Association will meet Wednesday afternoon, Thursday and Friday.

The Central Ohio Section of the American Ceramic Society will meet Tuesday and Wednesday.

The Ohio Paving Brick Manufacturers' Association will meet Wednesday and Thursday.

The Ohio Drain Tile Manufacturers' Association will meet Thursday and Friday.

The Red Brick Section of the Ohio Face Brick Association will meet Thursday and Friday.

The National Clay Machinery Association will meet Thursday and Friday.

The N. B. M. A. Official Bulletin.

The headquarters of these various organizations and the exact time and place of meeting and the headquarters rooms of the machinery manufacturers and supply dealers will be announced on the illuminated bulletin of the N. B. M. A. in the main lobby of the Deshler.

The Smokerette.

The informal reception and supper will be held Wednesday evening in the convention hall. Delegates and those accompanying them, including the ladies, will participate. Music, dancing and other amusement features will make the event a memorable one. The Association badge is the only requisite of admission.

The N. B. M. A. Banquet.

The social event of the week, the annual banquet, will occur Thursday evening in the convention hall. As in former years, it will be a subscription dinner under the auspices of the Executive Committee of the N. B. M. A., assisted by the local Entertainment Committee. Among the guests of the evening will be General Leonard Wood, Governor Cox, ex-Mayor Karb, the Reverend C. F. Chauncey, and other noted speakers. Members are expected to bring their wives, daughters or sweethearts, as the case may be. Full evening dress is in order, but is not essential.

Souvenir Badge and Number Button.

An appropriate souvenir badge and number will be presented to each delegate, and a guest badge to those accompanying them, same being furnished with the compliments of the local committee.

Entertainment of Ladies.

A special committee having in charge the entertainment of the ladies will provide various amusements, such as matinee parties, auto trips, shopping tours, etc.

A special program of the local events will be distributed by the Secretary of the N. B. M. A. at headquarters on the mezzanine floor, where visitors are requested to call and register on arrival.

N. B. M. A. Sessions Open to the Public.

All sessions of the National Association are open to the public. Those interested in the discussion of the various questions pertaining to better building and kindred themes will be welcome.

Those interested directly or indirectly in clay work of any character or the use of clay products of any sort are invited to join the Association and participate in the proceedings of the convention. Members and their families or friends who may accompany them will be expected to participate in all the entertainments and proceedings.

Those desiring further information as to requisite of membership in the N. B. M. A., formal program, etc., are requested to communicate with the Secretary at Indianapolis.

THE EXECUTIVE COMMITTEE,
J. W. Robb, President.
Theodore A. Randall, Secretary.

N. B. M. A. Program.

Retrospect and Prospect, George M. Fiske, Boston, Mass.

Americanism in the Clay Industry, Col. Edward Orton, Columbus, Ohio.

Traveling Over Brick Paved Roads, Moving Pictures, W. R. Mandigo, Kansas City, Mo.

The Marketing of Clay Products, John L. Rice, Akron, Ohio.

Treatment of Clay in the Bank, Wm. Burgess, Toronto, Ontario, Canada.

Fire Prevention, Walter A. Hull, Pittsburgh, Pa.

The Development of the Tunnel Kiln, C. B. Harrop, Columbus, Ohio.

Profit Sharing, J. P. Williams, Milton, Pa.

"Jones, He pays the Freight," J. G. Barber, Canton, Ohio.

The Brick Market (Illustrated), I. A. Ryttenberg, Sumter, S. C.

Common or Horse Sense in the Manufacture of Clay Products, Walter Colyer, Albion, Ill.

Drying Brick, Warren Griffiss, Baltimore, Md.

Fuel Economy, B. J. Gallagher, Canton, Ohio.

Refractory Materials in the Brick Manufacturing Industry, A. S. Watts, Columbus, Ohio.

Plant Equipment (Illustrated), R. C. Burton, Zanesville, Ohio.

Government Service in Developing the Clay Industry, R. T. Stull, Columbus, Ohio.

The Wheel Barrow Versus The Motor Truck, Marion W. Blair, Ridgeway, Pa.

Brickmaking in St. Louis (Illustrated), J. Stocke, St. Louis, Missouri.

Manufacturer and Dealer, John M. Stoner, Cincinnati, Ohio.

Other speakers and the members in general will discuss these and such other questions as are presented for consideration.

SHORT COURSE IN CERAMIC ENGINEERING.

University of Illinois Issues Bulletin Giving Details of Institute Program to Be Held March 1 to 13.

THE SHORT COURSE in ceramic engineering at the University of Illinois, Urbana, Ill., will be held March 1 to 13, inclusive. It is designed to meet the requirements of practical men and will deal with the principles underlying the work of managers, superintendents, foremen, burners and others who may be concerned in the manufacture of ceramic products. No fees are required, and a common school education is the only requisite. The courses include the following subjects: The Physics and Chemistry of Ceramic Materials and Processes; Origin and Classification of Clays; Prospecting and Sampling of Clays; Steam Shovel Mining; Explosives and Blasting; Winning of Clays; Haulage; Shaping of Clays; Dies; Drying; The Composition and Properties of Coal; Gas Producers; Burning; Kilns and Kiln Construction; Different Types of Refractories and Their Application; Steam Engines and Boilers; Boiler Water; Dynamos and Motors; Equipment Control; Maximum Production from Equipment; Glass Technology; Enamels; Clay Analysis; Pottery Bodies; Glazes, and Drafting and Reading of Drawings.

Naturally, applications from citizens of Illinois will be given preference, but applications from residents of other states will be considered in the order in which they are received. The bulletin will be sent on request to any manager or superintendent desiring to interest his foremen, burners, and others.

ANNOUNCEMENT AND PROGRAM FOR THE SECOND ANNUAL CONVENTION OF THE COMMON BRICK ASSOCIATION.

THE COMMON BRICK MANUFACTURERS' ASSOCIATION of America and the National Brick Manufacturers' Association meet in Annual Convention at Columbus, Ohio, February 16th to 21st. The Hotel Deshler has been designated as the meeting place.

By reason of the remarkable progress made by the newer organization, the Common Brick Manufacturers' Association of America, during the past year, there is reason to believe that the Columbus meeting will be the largest gathering of manufacturers of common brick that has ever been held in the country. The new Association has already gathered to itself manufacturers producing about one-half of the national output of common brick. These manufacturers have subscribed a fund of $300,000 to be used for publicity, and their deep interest in the forthcoming activities of this Association will prompt all to attend the meeting at Columbus and learn in detail of the program to be followed.

The entire advertising campaign of the Association is so planned as to give the greatest possible advantage to the member manufacturers. A splendid plan service prepared by the Association will be available to builders only through the manufacturers who are licensed to put the Association trade mark upon their brick. The whole $300,000 is to be spent in building up preference for the trade-marked brick.

In addition to an interesting three-day program, there will be a big display of the house plans and specifications and advertising to be used in the Common Brick Association's national advertising campaign. There will also be some sample panels of common brick, showing the effects obtained by various bonds and motar joints. A novel competition will consist in a display of samples of Association trade-marked brick, and to the manufacturer presenting the best specimen will be presented a fifty-dollar silk hat.

There is also to be a prize to the member of the Association bringing to the Association the greatest number of non-member manufacturers and securing their application for membership.

The first session of the convention will open at 2 P. M. Monday, February 16th. There will be reports from the delegates from every State in the Union, covering all the vital points of the industry in each of these localities.

Some of the other features of the various sessions will be: "Common Brick for Facing Purposes," by Warren Griffiss, Baltimore; "Air Space in the Common Brick Wall," by Walter Simons, Los Angeles; "Building 10,000 Houses with Common Brick Walls," by James T. Bassiger, Chicago Housing Association; illustrated talk upon "Brick Homes, Old and New," by W. N. Cary, Albany; "What the Architect Should Know About Common Brick," by D. Knickerbacker Boyd, F. A. I. A., Philadelphia; "Standardizing Common Brick," by William Carver, Association Architect, Chicago; "Putting Your House in Order," by Ernest E. Bell, Hydraulic Steel Company, Cleveland; "The Cost of Manufacturing Brick," by E. H. Scull, Chicago.

There will be one session devoted to the subject of advertising with addresses by advertising men of national prominence. A joint banquet of the two Associations will be held on Thursday evening.

The present officers of the Common Brick Manufacturers'

Association are: William Schlake, President, Chicago; C. H. Bryan, Vice President, Detroit; Ernest S. Barkwill, Treasurer, Cleveland; Ralph P. Stoddard, Secretary-Manager, Chicago; and the following Directors: Tom W. Green, Sioux City, Iowa; Warren Griffiss, Baltimore; Fritz Salmen, Slidell, La.; John P. Cahoon, Salt Lake City; Charles Francis, Muskogee, Okla.; W. N. Cary, Albany; Max D. Almond, Corsicana, Tex.; George A. Parry, Boston; J. F. Reynolds, North Haven, Conn.; B. W. Ballou, Kansas City, Mo.

ASSOCIATION ETHICS AND CONVENTION ETIQUETTE

SUPPOSING that every brick manufacturer in America has awakened to the fact that it is his duty to become a member of the N. B. M. A., as well as of the commercial organization representing his own special branch of the brickmaking industry, and supposing further that he has fulfilled this duty, he would naturally want to know how to comport himself in the new relationship, how to regulate his associational activities and to conduct his business in accordance with the ethics of the organization. Now, the N. B. M. A. has no established code of ethics, but certain unwritten laws are, or ought to be, recognized by older members who have given much thought to the welfare of the association. For the present,. we will consider only the duties of members as regards the annual conventions.

It is not to be expected that every member can attend every annual meeting, but we all know that the most successful brick manufacturers are those who associate most frequently with their fellow manufacturers and are oftenest found at the conventions. Why? The most successful men in any line of business are constantly on the lookout for new ideas. They make it a point to mingle with their competitors and get their viewpoint on the various phases of their business. No man is so big or important that he cannot learn something even from those who know less than he does. The little man can always grow bigger by association with the man farther along. We get ideas from others and then work them over and develop them into something bigger and better, but our start often comes from some other fellow's ideas. But remember that to retain new ideas and make them a permanent possession we must impart them to others, and every time we give it to someone else we find that it grows into a still larger and more valuable idea in our minds. As Elbert Hubbard expressed it, "the only way to keep your education is to give it away."

Don't be a clam. A clam never makes a successful business man. About twenty-five years ago a large face brick plant was built in northern Ohio, and the policy was immediately adopted of allowing no visitors and giving out no information. The general manager attended one convention of the N. B. M. A. and told the writer that he considered that the members were foolish to come there and give away points that they had learned in their business. He never came again, and in a few years, after his company had spent over $300,000, the plant was forced to shut down and be sold.

Come to the Columbus convention. Open your mouth as well as your eyes and ears. Give and take and grow. Talk over your business and manufacturing problems. Contribute something to the progress and elevation of the brickmaking industry. If you can't come, send on your dues and renew your membership—the money is necessary to keep the good work agoing.

Now as to convention etiquette, it must be confessed that we have all grown careless and that reformation is needed from the master of ceremonies to the humblest delegate. What loyal member has not felt chagrined and humiliated at the lack of attention shown to some of our invited guests? Are not the following some of the things we ought to observe?

1. As the programs of the meetings of an educational organization are made up largely through solicited contributions from those who are known to be competent to speak upon the subject assigned them, and as these papers and addresses have been prepared especially for us and at our request, is it not the plain duty of every member who is fortunate enough to attend the convention, to be present at every session and give respectful attention to the speakers? We owe it to these speakers to show our appreciation of their contributions, and we certainly owe it to ourselves to sacrifice outside attractions and show common courtesy to those who have come to entertain or instruct us. Ample time is properly given at these gatherings for social and business intercourse, and we should all be willing to give our undivided attention to the educational program during the sessions.

2. As only a part of the time is set apart for the sessions, and as much is lost at every meeting by insufficient time to properly discuss the papers, it is the duty, first, of the officers of the association to be in the convention hall and call the meeting to order on time, and, second, it is the duty of every member to be there also.

It may be a rather slow process now to get our membership in the habit of being in the convention hall on time, and for this our officers are largely responsible, since we have come to know that the sessions of the N. B. M. A. never open until half an hour or so after the appointed time. Would it not be well for our secretary to have something especially attractive for the opening of each session and to bring it out on time? At any rate, something must be done to save our meetings from the present humiliating and demoralizing effect of loss of time in starting. Let us all resolve to make the Columbus meeting the most interesting, as it promises to be the most largely attended, of any meeting in the history of the association.

W. D. R.

WISCONSIN CONVENTION CHANGES DATE.

The meeting of the annual convention of the Wisconsin Clay Manufacturers' Association will be held at the Republican House, Milwaukee, January 27 and 28, 1920, instead of February 12 and 13, as previously announced. A large attendance is anticipated and a good program has been prepared. All visiting clayworkers will be cordially welcomed.

THE NEBRASKA STATE CONVENTION.

The brick and tile manufacturers of Nebraska will meet in annual convention at Lincoln, February 2. Secretary Frank B. Ringer announces that the program is the best ever, and provides for a very pleasant and profitable meeting. For further particulars address Mr. F. B. Ringer, Orpheum Theater Bldg., Lincoln. It is planned to hold one or two of the sessions in the new chemistry building at the Nebraska University.

THE PRICE OF BRICK.

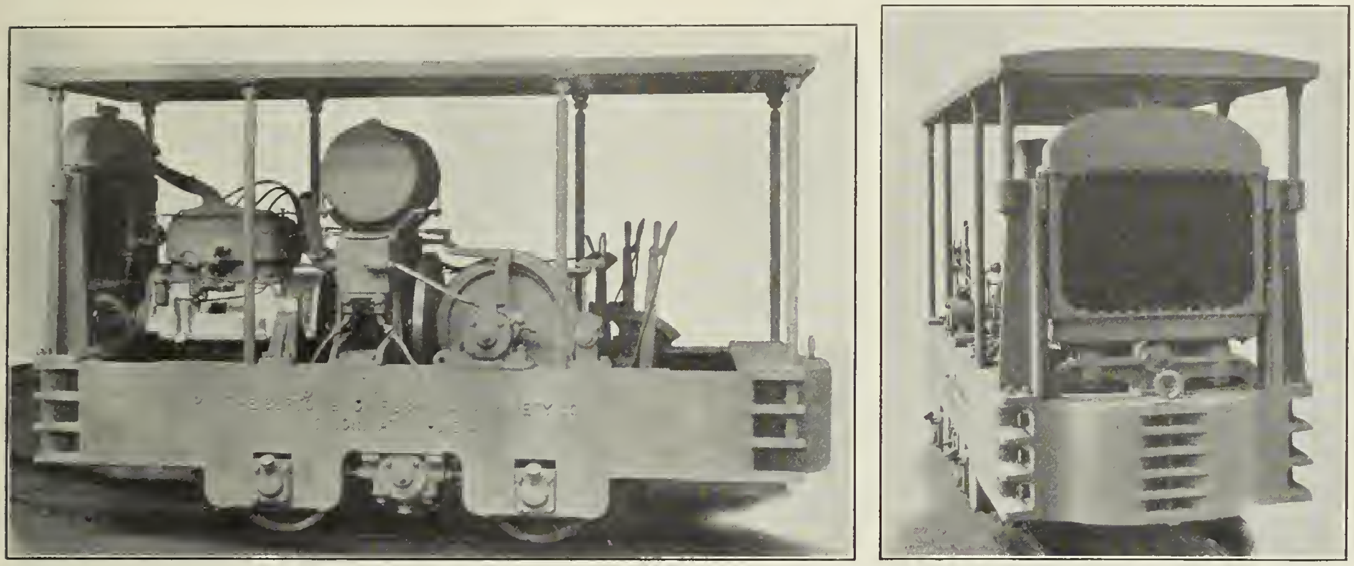
A very fruitful source of conversation among brickmakers throughout the land is the current market price. Of course brick are selling for more now than they did during the war, but the present market price, which averages around $16.00 for common brick, is reasonable compared with other materials and the increased cost of production. Mr. A. C. Ochs, the veteran brickmaker of Springfield, Minn., recently had occasion to take the editor of the Daily News of St. Paul to task for an exaggerated statement on the subject. Among other things the editor said: * * * "The dollar has shrunk and construction costs have skyrocketed. Bricks, for instance, cost six times as much as they did in 1914. Builders have postponed their plans to wait for prices to come down."

Mr. Ochs protests against this exaggerated statement. It is true that brick has advanced to double the former price, but other materials are selling at even a greater increased cost. Mr. Ochs states that never in their experience have they been so far behind on actual deliveries, that the demand for brick exceeds the local supply, so it is evident that the people of that vicinity are building and not waiting for a decline in prices.

GASOLINE AND KEROSENE LOCOMOTIVES.

IN THESE days of labor shortage, machines, equipment or devices which reduce to the minimum labor requirements in various departments of the clay plant are playing a big factor in solving this difficult problem.

In the handling of raw material, especially in the clay haulage end of the business, the gasoline locomotive has proven a godsend. It has reduced better than fifty per cent. the men required in the clay field and has doubled the capacity of many a plant due to the increased tonnage of material supplied over the old methods.



Side and End Views of the Burton Gasoline and Kerosene Locomotive

In this particular the Burton locomotives made by the Burton Engineering and Machinery Company of Cincinnati are proving eminently satisfactory. They are high grade locomotives made for any gauge track, designed to operate with either gasoline or kerosene, and built in sizes ranging from 3½ tons to 12 tons. Simplicity of construction and operation are the essential features, as the power is transmitted through a spur friction, 22 inches in diameter, on a large shaft carried on Hyatt Heavy Duty Bearings.

The Jack Shaft is on Heavy Duty Hyatt Bearings driven by steel roller chains having ¾-inch Rollers, 1¼-inch Pitch, and the final drive to semi-steel wheels with chilled flange and rim ground to a true running surface. These wheels are pressed and keyed on special axles which are mounted on extra large Hyatt Standard Bearings in Journal Box, carried on coiled springs of the proper size to insure smooth running with ample provision for lubrication.

Steel Roller Chains and cast steel sprockets are used throughout, eliminating all Gears.

The friction control is operated by hand lever, brake by hand lever, speed chains by special locking device, and Engine controls are all within easy reach, and conveniently located for the operator.

The Cab is of Wood and Metal construction, extending the entire length of the Locomotive, providing ample room for the Operator, and giving free access to all parts of the Locomotive.

The Motor is the latest type of Herschell-Spillman, Four Cylinder cast in block, equipped with Bosch High Tension Magneto, Zenith Automatic Carburetor, Pierce Mechanical driven Governor, and Radiator with Cast Iron Shell, Honey Comb Core, Spring Hangers, which absorb all shocks, which a machine of this type is subject to. There is also a Guard in front of the Radiator, to protect it from damage by articles protruding from cars in actual work.

The Burton Locomotive eliminates all complicated parts such as Gears, Differentials, Clutches, Licensed Engineers, and all trouble.

It is claimed for the Burton locomotives that they are the simplest in construction and operation, lowest in cost of upkeep and fuel consumption, of any Gasoline Locomotive on the market. Additional illustrations are shown in ad on page 75.

FRENCH EMBARGO BUILDING MATERIAL.

Consular reports indicate something of a scarcity and need for building material in France. For example, a recent decree prohibits export of either slate or tile roofing or other common earthern ware material for building purposes, including gutters and drainage pipes, chimney pots, etc., plainly aside from table ware and decorated pottery France will need at home all the clay products her plants will be able to turn out the next few years. Also, it is likely that a share of the table ware will be required for home needs and it will be some time before they figure largely in the export pottery trade.

Brick stock piled in the yard is not perishable and does not depreciate in quality at any time, and this time it will not likely remain long in the pile because there is plenty of demand in prospect for all that can be piled up.

LEADING DISTRICT OF COLUMBIA BRICK MANUFACTURER PREDICTS BIG YEAR.

ALL OF THE BRICK manufacturing plants in the District of Columbia are operating full time, many of them having orders booked which will carry them up to nearly April 1st. At this time last year but two of the District plants were operating.

L. Perry West, of West Bros. Brick Co., reports brick producing conditions in the Washington area as greatly improved in the past two months, with prospects for a big spring and early summer trade.

"The matter of coal shortage due to the strike," said Mr. West, "promised to tie up things here, and even as it was we had to begin using hardcoal, as soft coal could not be had at any price. This meant, of course, that we had to make an advance in our prices, but now that soft coal is again obtainable somewhat more freely we have put the price back to the former figure. This applies to common brick, which is the only kind we make. Labor conditions are improving, as there are more workers available. This means that the brick manufacturers can replace incompetent and unprofitable workers, where during the past year it was necessary to hold on to any men we could get, regardless of ability. I look for this year to be a busy one, with a necessary advance in prices to cover increased costs of production."

The West Company was one of the few brick manufacturing concerns in the country which were caught with big brick contracts unfinished when the war ended, the concern having had contracts for over 2,000,000 brick cancelled when the armistice was signed.

The following reference is made to clay products in the annual report of the Secretary of Commerce just submitted to Congress:

"Clay products form a whole group of useful and art industries, ranging from the crudest brick and tile to the finest porcelains used in the household, including the art porcelain ware, vases and other art products. The bureau's laboratories have been able to reproduce many of the finest qualities of foreign ware, both body and glaze. Chemical porcelain ware is a type of successful work accomplished. Much remains to be done in placing the clay products' industries on a thoroughly scientific basis, but great progress has been made.

"The refractory materials used in numerous industries have been the subject of investigation at the bureau, and new substances having superior qualities have been developed. Several companies have undertaken to manufacture, for example, a new type of refractory proposed by the bureau last year, which combines light weight, porosity, good heat-insulating properties, and a high refractoriness, and is especially suited for use in marine boilers as furnace crowns, and for kiln blocks for terra cotta. The bureau has been able to produce pyrometer tubes more than 7 feet in length of American porcelains, similar to those imported from Germany before the war.

"The investigations of hard-fire porcelains which have been under way for three years are nearly completed. The properties of more than 300 compositions have been studied to acquire the technical data needed in the industry. Several thousand pieces of tableware were glazed and fired. The results will shed much light on practical aspects of hard-fire porcelain manufacture.

"Tiles used in wall construction were the subject of an important investigation by the bureau. The results of about 250 tests are published in a bureau technologic paper. The data will be valuable for the building industries. It is found that the source of the clay profoundly affects the clay behavior. The correlation data will be complete when the results of similar tests from other laboratories are assembled. Gratifying results were obtained in the study of architectural terra cotta. Much attention was paid to examining materials in actual buildings for various periods of time. Two striking types of failure were studied and accounted for. The laboratory work included absorption tests, artificial freezing and strength determinations of terra cotta made from various clays largely used by manufacturers. The test pieces were burned at seven different temperatures. The resulting data will soon be announced in a final report."

The National Research Council and the American Ceramic Society, jointly, have formed a committee for the purpose of investigating American clay products with the view to widening the scope of their usefulness. The following are the members of the committee: A. V. Bleininger, Bureau of Standards, Pittsburgh, Pa., chairman; Arthur L. Day, Homer F. Staley, R. B. Sosman, E. W. Washburn. Professor Washburn, University of Illinois, Urbana, Ill., is the secretary of the committee.

ALTHOMAR.

NOTED BRICK MAN BREAKS INTO VERSE.

Among the many greetings which came to us during the holiday season was the following bit of original verse from the pen of Will P. Blair, Vice-President of the National Paving Brick Manufacturers' Association, Cleveland Ohio:

The New Year is here with its hopes to unfold,
We've but little to say of the old.
The wish of the hour is for the best—in a plenty
Throughout the year 1920.
That the road over which you travel
Being brick, may never unravel;
Bearing joy with your journey,
No wreck, neither stormy,
At the end—a full measure for you,
Is our wish, sincere and most true.

LINCOLN HIGHWAY WORK.

A press bulletin of the Lincoln Highway Association, Detroit, Michigan, making an annual review of the greatest year in the history of America's Main Street, gives among other things a classification of the types of road construction up to January 1, 1920, shows the following:

Concrete	294.84 miles
Brick	212.58 miles
Bit. Macadam	425.61 miles
Macadam	286.65 miles
Asphalt	78.00 miles
Creosote Block	5.90 miles
Granite Block	7.10 miles
Graded Gravel	770.75 miles
Natural Gravel	200.00 miles
Shale	17.00 miles
Graded Dirt	817.57 miles
Natural Dirt	93.70 miles
Sand	13.30 miles
Total	3,223.00 miles
"Improved" Mileage	2,538.00 miles
"Unimproved" Natural Road	685.00 miles

AUTO OWNERS AND INCOMES.

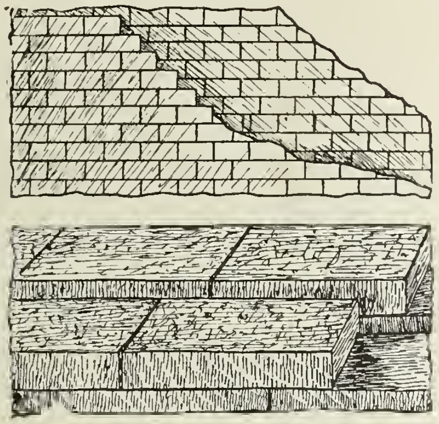
We are told that there are 6,353,233 automobiles and trucks owned in the United States and that only 2,146,265 of the owners have paid income taxes. This would indicate statistically that only one third of those owning automobiles pay the income tax. Here is an interesting question of how many are owners of automobiles and have not enough income to justify this ownership, and how many have more income than they are reporting for taxation.

FURNACE WALL CONSTRUCTION ILLUSTRATION.

Thomas McDermott, of Dayton, Ohio, recently described in the National Engineer some experiments in the building of boiler walls which should be of interest to all those furnishing brick for this purpose, and to builders of kiln and furnace walls.

After calling attention to the unsightly, dangerous and inefficient condition of cracked boiler walls he said: "Several experiments have been made to build settings that would remain air and gas tight. Among these may be mentioned building sheet iron, tin, asbestos sheets, etc., into the wall, all of which have proven more or less of a failure. The writer operated two boilers, where the boiler walls were constructed of solid concrete, 20 inches thick, and lined with fire brick. There walls had numerous cracks, a number of which were ¾-inch wide.

To overcome this trouble and build a wall that is proof against cracks, a tier of insulating brick should be laid up in the middle of the wall from the bottom to the top of the fire line; this tier and the three outer ones should be laid up on different levels so as to break the joint both ways, as shown in the accompanying sketch. Half brick should be provided for leveling the wall for binding courses. A wall built in this manner will not crack."



Construction of Walls of Boiler Setting to Prevent Cracks.

The gist of the discovery from these experiments consists in breaking the continuity of the wall joints through the thickness of the walls the middle course of brick being made a little higher or lower than the outer course. While this interferes somewhat with cross bonding there are several practical methods to secure bonding of the different courses of the wall, such as using a split brick course occasionally and laying a cross bond of the brick, and then another split break course to break the continuity of the joint again. Also it should be practical to use metal ties and do the bonding with them so that the brick joints have no continuity from top to bottom of the walls. In a varied way this idea should be applicable to kiln wall construction and to other furnaces as well as to boiler setting.

In the present day of readjustment quicker and better results are obtained from advertising than ever before. The public seems quick to respond.

CERAMIC RESEARCH.

The American Ceramic Society and the National Research Council have established a joint committee for promoting the investigation of scientific problems underlying the ceramic industry, especially by founding a series of research fellowships whose holders shall devote their attention exclusively to these problems. The American Ceramic Society is well enough known to the clayworking industry. The National Research Council is an organization with offices at 1201 Sixteenth St., Washington, which was organized primarily as a part of the National Academy of Sciences. It came into existence during the war and its purpose is to stimulate research in mathematic, physical and biological sciences and in its application of science to engineering, agriculture, medicine and other useful arts with the object of increasing knowledge and strengthening the national defense and contributing in other ways to the public welfare.

INTEREST IN CLAY PRODUCTS DEVELOPMENT.

In a press bulletin of the United States Geological Survey, used as a preface to the announcement of the special bulletin on the clay and shales of Minnesota, we find the following, which speaks for itself:

"The increasing use of clay products in the building trades gives interest to all deposits of clay or shale that promises to yield material which can be made into bricks, tiles, sewer pipe, or draintile, and this interest is made greater by the increasing cost of lumber and by the obvious necessity of reducing our enormous fire loss by constructing fireproof buildings.

"Deposits of clay, shale and slate are abundant and widespread, and many communities are paying transportation charges on large quantities of them and of their products, which are brought from afar while deposits that will yield products equally good lie close at hand. Only detailed examinations and tests can make known the quantity and quality of the material of these deposits, and such examination should form a part of a country-wide detailed survey made to determine the location, quantity and value of our unutilized mineral wealth."

THE HOUSE OF FATE MACHINERY.

"Mile a minute Plymouth, Ohio," is an apt slogan for the little town half way between X and X, where the truly live citizens raised $31,000 in thirty minutes as a fund for new homes needed by the town's increasing population of workmen.

A few weeks ago the Plymouth Commerce Club held a special meeting to raise money to build homes—workmen had to be housed because their great Plymouth industrial corporation had to have the workmen. The Club members met and, as before stated, raised $31,000 in thirty minutes, and a few hours later the sum was raised to $50,000.

Plymouth folks are justly proud of their active town of 1,500 inhabitants, and its one great corporation which employs most of the laboring men. This corporation, The Fate-Root-Heath Company, covers a vast acreage to accommodate the many products, the main one of which is the Plymouth Gasoline Locomotive, which is now marketed all over the world.

Plymouthites realize what such an industry means to their town, and their record-breaking, money-raising "stunt" is only one of the many ways of co-operating with the industry.

The Fate-Root-Heath officials are equally proud of Plymouth, as is evidenced by a million dollar investment, and the prompt action of the Commerce Club in seeking to comfort employes is truly a well-earned claim to such pride.

SEEN IN NEW JERSEY.

NOTWITHSTANDING the arrival of cold weather, and it has been cold in this part of the world, a good share of the time of late, the sale of brick goes on. Business is better now, with the mercury hovering between zero and a few degree above, than it has been many months in the past few years at the height of what should be the building season. Most interests are looking forward to a continuation of the present conditions all through the present year. They say that it will take at least a year or two for building to catch up with the demand and until it does the same degree of activity will be seen as now.

Prices for all common brick, no matter where they are made, rule high and nothing indicates any reduction. Even in winter weather the price continues firm, and possibly it may show a little advance in some localities. In and about Newark common brick have sold as high as $22.00 during the month. Jersey City has seen prices ranging from $20.50 to $22.00. Paterson quotes from $18.50 to $20.00 and a few have been sold as high as $21.00. Passaic is asking $22.00. Hackensack is asking $17.50 at the yards and about $19.00 delivered. Rutherford is getting $23.00. Englewood has made a price ranging from $22.00 to $23.00. Ridgewood has sold as high as $24.00, but $22.00 is nearer the regular figure. Perth Amboy has been getting $19.00 and the Raritan section is asking as high as $17.50 to $18.00 for all common brick. Trenton has been getting $21.00, and New Brunswick has asked as high as $20.50, or perhaps 50 cents higher in some instances for small lots. In southern New Jersey the price has been even higher running up to $24.00 in some localities and scarcely less than $22.50 anywhere. Prices are making no difference with buying. Builders are operating just the same and are apparently planning further construction the coming spring, paying very little attention to the price of building material. Holders have only small supplies in all these centers and are unable to get more. The result is a tight market in which it is impossible to obtain concessions.

William T. Fanning, one of the best known architects in northern New Jersey, with offices in Paterson, said, in talking of the outlook for next season: "It was never better. Building is going forward at a very rapid rate. Demands for new buildings will be heavier than they have been this year. Preparations now are extensive and new construction promises to exceed anything in recent years. Price seems to make no difference. Builders are going ahead just the same, or it appears as though they are, while the projected work is much larger even than that for which contracts are let. The outlook is promising for all kinds of building in this vicinity."

About three million dollars in new mill construction is projected for Paterson the coming year. A great many new mills will have to be built this year, more than ever before. Builders want to erect enough to enable them to install 32,000 new silk looms, doubling the number now operating in Paterson. With this mill construction must go a great deal of dwelling development, and that seems in a fair way to be realized. In fact, the situation in Paterson seems to exceed anything known since the big fire of 1902. Another important project is a new high school for which the first estimates were $7,000,000. These will be reduced, but the total cost will still be very large.

At Hackensack all operations around the yards are stopped, with one exception. The old M. B. & M. L. Gardner yard is still active. But all others have closed for the winter, though up to the last of December burning was still in progress. They were able to get the brick dried and set in the kiln before freezing weather began and burning went on until the kilns were finished. Nothing is left in the yards for early delivery. Motor trucks are taking them away almost before they are cool for use in operations which are now in progress. Hackensack had a very prosperous year in 1919 and it is understood that some important developments are proposed for 1920. The motor truck has enabled Hackensack manufacturers to deliver quickly and economically and get their brick where they are wanted without delays which frequently kill sales when shipments are made by rail. The motor truck is placing Hackensack on the brickmaking map again.

The quantity of common brick in storage in Newark is very small. Holders are firm in their views on prices and are insisting upon getting full range of values. Some express the opinion that prices will be higher the coming spring, at least at the opening, before enough are ready for delivery to enable builders to go ahead with their work. They believe that users will bid against each other for supplies and that the market will be strong and active at the opening because of shortage of material.

Some of the new price scales for the building trades are surprising. Bricklayers, for example, are getting $12.00 a day, and they have no trouble getting it because the number of bricklayers available is so much smaller than the number needed to do the work. Carpenters are to be paid $1.00 an hour, eight hours a day, five days a week. No Saturday work under the new schedules. Painters are to have the same. No further agreements have been reached, but these are typical of what may be expected with reference to the others. These prices have been reached without difficulty and with all persons interested apparently quite ready to pay them. It means high costs to the builder and may prevent some of the development that now looks so promising, yet as a whole, it would appear that employers are satisfied. If they get their work done they will make very little complaint.

Various centers in New Jersey report a good demand for hollow tile and prices for the different sizes have advanced somewhat. For 3x12x12 the price is now $120.00 and for 4x12x12 the price is $130.00 to $135.00. Face brick is going fairly well and $45.00 to $50.00 a thousand is asked. Good grades are not numerous and with winter coming on the outlook for obtaining fresh quantities is not promising. Fire brick is wanted in the new industrial plants and is hard to find. The price for No. 1 standard fire ranges from $65.00 to $70.00 a thousand in most large centers. It may be a shade higher in some of the smaller towns.

The Washburn Brothers Company, of Jersey City, is getting good shipments from Glasco, N. Y., the source of its manufacturing supply. The Glasco plant is an all year organization and turns out about 5,000,000 a month. The price at the yards in wholesale lots is $20.00 a thousand. Washburn Brothers do a large business in mason materials and building brick and are getting together as many as they can to care for their winter business and to deliver orders for early spring.

A. L. B.

WESTERN ONTARIO CLAYWORKERS TO MEET.

The Executives of the Western Ontario Clayworkers' Association, and the Ontario Drainage Association have decided to hold a Joint Annual Convention, at the Builders' Exchange, London, Ontario, February 24, 25 and 26, inclusive, 1920.

A splendid program is being arranged, and it is expected that this convention will be the best in the history of the Associations.

ESTIMATING BRICK WORK.

By I. P. Hicks.

BRICK, AS MADE by different manufacturers, vary in size and, of course, there is sure to be more or less variations in the actual quantities required for certain jobs; the variations depending upon the size of the brick and the size of the mortar joints made in laying the brick, says I. P. Hicks in the National Builder. For the purpose of estimating we will assume as near as we can the average size of brick as we find them on the market. For the common brick we will assume it to measure 8¼x4x2½ inches and that the wall is to be laid up with ⅜-inch mortar joint.

For this kind of a wall figure 6 brick to each square foot of wall for every 4-inch thickness of wall. Thus, for a wall 4 inches thick, figure 6 brick per square foot; for an 8-inch to 9-inch wall, figure 12 brick per square foot; for a 12 to 13-inch wall, figure 18 brick per square foot; for a 16 to 17-inch wall, figure 24 brick per square foot and so on, adding 6 brick for each 4-inch thickness of wall.

To be very accurate in the number of brick required, deduct the brick required for all openings. In small foundation work, where there are only a few small cellar window openings, it is hardly worth while to deduct the openings, but for the main windows and doors in a brick building, it becomes necessary to deduct the brick for the openings, otherwise the result would be far too many brick.

Brick Footings.

Brick footings, based on steps or offsets of 2 inches, may be estimated by the lineal foot, as follows: For a 9-inch wall, 2-course footing, 10½ brick; 13-inch wall, 3-course footing, 22½ brick; 18-inch wall, 4-course footing, 39 brick; 22-inch wall, 5-course footing, 60 brick; 26-inch wall, 6-course footing, 85½ brick.

Press Brick.

For a standard size of press brick we will assume the following dimensions: 8¼x4x2¼ inches, and the mortar joint to be ¼ inch. This will require 7 brick per square foot for every 4-inch thickness of wall.

Mortar for Brickwork—Lump Lime Mortar.

The quantity of material required to lay 1,000 brick with a ⅜-inch joint, using 1 to 2 lime mortar, composed of 1 part lime putty to 2 parts sand, will be 1¾ barrels of lump lime and ⅝-cubic yard of sand.

Hydrated Lime Mortar.

For mortar composed of 1 part hydrated lime and 2 parts sand, figure 6½ 50-pound sacks of hydrated lime and ⅝-cubic yard sand per 1,000 brick.

Cement Mortar.

For 1 to 3 cement mortar composed of 1 part Portland cement and 3 parts sand, figure 5 sacks of cement and ⅝-cubic yard of sand per 1,000 brick, with a ⅜-inch mortar joint. Approximately 2½ bags of cement and 1-3 of a cubic yard of sand will be required if laid with about a ¼-inch joint.

Cement and Lime Mortar.

Figure 1 sack of Portland cement, ¾-barrel of lump lime and ⅝-cubic yard of sand per 1,000 brick laid in the wall with a ⅜-inch mortar joint.

Estimating Brick for Chimneys.

Sizes Given are Inside of Flue Measure.

8x8 flue, 24 brick per lineal foot.
8x12 flue, 28 brick per lineal foot.
12x12 flue, 32 brick per lineal foot.
12x16 flue, 36 brick per lineal foot.
16x16 flue, 40 brick per lineal foot.
8x8 double flue, 40 brick per lineal foot.
8x8 and 8x12, two flues, 44 brick per lineal foot.
8x12 double flue, 48 brick per lineal foot.
8x12 and 12x12, two flues, 52 to 56 brick per lineal foot.

Chimney breasts for fireplaces and mantels require 90 to 110 bricks per lineal foot the height of the chimney breast. Where the chimney is reduced in size above the breast, figure according to the size and number of flues from there to the top as given above. These figures should enable one to arrive at a very close figure as regards the number of brick required. In the above figures no allowance has been made for any waste in brick and it would be proper to allow a small percentage for broken and wasted brick. If the brick are of good quality, 3 to 5 percent. ought to cover all the waste in handling and laying.

Labor Cost of Laying Brick.

The labor cost of laying brick varies according to the wall, the bond and the kind of mortar joint made. Common brick laid with common bond and plain cut joints: a bricklayer, with one tender, should lay 1,100 brick per 8-hour day, using cement mortar, and 1,350, using lime mortar.

For walls laid in common bond with struck joint one side and plain cut joint on the other side, figure 1,000 brick per 8-hour day, using cement mortar, and 1,200, using lime mortar.

For face walls laid up with selected common brick in common bond with V-shaped mortar joints, or with joints raked out, figure per 8-hour day, 900 brick, using cement mortar, and 950, using lime mortar.

Face walls laid up with press brick or face brick where there are panels and pilasters, figure 350 to 400 brick per 8-hour day.

For plain walls laid up with press or face brick, figure 700 to 800 brick per 8-hour day.

Figure laborer's time same as bricklayer's time where there is but one bricklayer working; if two bricklayers are working, figure ½ hour laborer's time to 1 hour of bricklayer's time.

THE A. H. I. ON TRADE ASSOCIATIONS.

From the library of the Alexander Hamilton Institute, which is considered the most authoritative institution in the country on business ethics and methods, in Vol. 1, on the Ethics of Business, incidental reference is made to trade associations in two instances and some extracts from these are very appropriate at the present time.

Under the head of "Trade Association," we have the following: "A potent influence in standardizing business practices has been exerted by the various trade associations. * * * These associations which have been organized in connection with all the important trades of the country have for their purpose the advancement of the common interest of their membership, and are themselves evidences of the fact that business standards in the United States are tending steadily upward."

Under the head, "The Moral Imperative in Business" we have: "The man who does not co-operate with his competitors in their efforts to raise standards, enforce laws and prevent unfair practices is ethically recreant. * * * That accounts for the great increase in the number of business associations during recent years. * * * One of the objects of these associations is the establishment and maintenance of a code of ethics or honor. A business man who neglects to support the association that has been organized for the good of his line of business neglects a real duty."

CORRESPONDENCE.

THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

ILLINOIS CLAYWORKER PROSPEROUS AND CHEERFUL.

Editor The Clay-Worker:

Enclosed find draft for $2.00, to pay for the Clay-Worker for another year.

In regard to the outlook for this year, it looks good to me. I am still behind some 30 carloads of tile on orders, and can take more orders for spring delivery than I have capacity to make. Prices are a good deal better than they were a year ago, and one can make ends meet and have some left, which is as it ought to be. I hope to get to the Columbus N. B. M. A. Convention, but it depends on the weather and conditions at home. Wishing you a prosperous and a happy New Year, also best regards to Miss Wallace and James,

Yours truly, GEORGE J. WALTER.

Chatsworth, Ill.

WATERSMOKING DRY PRESS BRICK.

Editor The Clay-Worker:

Replying to the query in December issue, "What is the best method of watersmoking dry pressed brick, where brick are set direct from the machine in kiln, oil being used for fuel to burn, and wood is not available for drying off?"

It is well known that dry press brick require more time and care in watersmoking than brick made by any other process. The "method" employed to get positive, satisfactory results in every kiln, without waste of time, is much the same whatever fuel may be used.

Instruments should be provided for measuring the temperature and, wherever practicable, the draft. Readings should be made and recorded at regular intervals, say every hour or two. It is well to lay out a schedule or curve beforehand to be followed as closely as possible, this schedule being on the safe side, and then modify this the next burn by making the increments more or less, as the results may indicate.

For measuring temperatures, two kinds of watersmoking thermometers are made, one a long stem mercury thermometer with scale case projecting above crown of kiln, the stem having an adjustable clamp flange for holding the instrument at the proper height and the back of the scale case having a handle for lifting the instrument and carrying it from one kiln to another. This thermometer should have a range of 100 to 600 degrees F. For measuring the temperature in the bottom of the kiln, near the floor, an armored thermometer of small diameter is used, having a chain attached to the top for lowering down through the brick to the bottom and pulling out for reading. This thermometer should have a range of from 80 to about 500 degrees.

When, after a few months, it has been determined what temperature, at a given draft, at the top of the kiln is necessary to produce a certain temperature at the bottom, the thermometer at the bottom may be dispensed with. But the long-stem thermometer at the top and the draft gage should always be used and records kept in a systematic manner for guidance and reference, as no man can tell by looking at the fire in the furnace during watersmoking what the temperature is in the kiln among the green bricks.

The question cannot be answered specifically without knowing all the conditions, but it is assumed the problem in this case is to regulate an oil fire at such low temperatures. It is not stated whether the oil is to be sprayed into the furnace by steam or by compressed air.

The writer was in this very same situation many years ago, changing from natural gas to crude oil, using steam for spraying the oil. The difficulty was in cutting down the quantity of oil for each burner without clogging the valve or burner. This should be easier today when oil filters are used and the oil heated so as to flow freely and kept under pressure by a pump. The steam should be held at high temperature but not enough used to cause condensation on the cold bricks in the kiln, or the steam may be shut off at first and a low fire kept by igniting the dripping oil. When a higher temperature is required the steam should be turned on and the oil sprayed in the usual manner, maintaining a small but hot fire and regulating the temperature in the kiln by admission of air into the furnace.

EXPERIENCE.

LONG ISLAND BRICK MAN HEADED FOR FLORIDA VIA COLUMBUS.

Dear Randall:

Please be sure to engage a good room with bath at the Deshler Hotel, convention week for Mrs. Post and myself. We expect to arrive Monday, the 16th. We have our tickets for Florida now and will go there direct from Columbus.

I made brick right up to January 3rd, and then had to stop because I was out of soft coal; have three cars on the road now, one of which left the mines the middle of December. It has been very cold here this winter, even for Long Island, but I still have a small kiln of 300,000 to burn. They are all sold, and could have sold more if I could have made them. In fact, was busy all last year, and could not keep up with our orders. Want to start the wheels going again as soon as we get the coal coming good.

Hope to see you all at the convention.

Yours very truly,
Glenn Head, L. I. JOTHAM POST,

AN ECHO FROM THE FRENCH LICK MEETING.

Dear Mr. Randall:

In looking over your Christmas number of The Clay-Worker we note that in your report of the Face Brick Manufacturers' Convention at French Lick Springs, Indiana, that Mr. Tom W. Green was successful in winning first prize for the best answer to the question of what Common Brick are worth.

We have questioned him in regard to this, and failed to discover what the prize was and whether he received it.

As we are at all times anxious to check up his deportment when attending the respective conventions, we would be pleased to hear from you in reference to the above.

Thanking you kindly for any such information as you may be able to furnish us with, and wishing you a happy and prosperous New Year, we remain,

Yours very truly,
GEORGE STIRLING,
Sales Manager Tom Green Brick Co.

Sioux City, Iowa.

(The Clay-Worker scribe who was responsible for the mention of Mr. Green's prize-winning prowess states that the prize was a glass of Pluto water, extra hot, with a dash of salt in it, and if Mr. Green did not get it, it will be waiting for him at the next French Lick meeting.—Editor.)

GASOLINE ENGINE WANTED.

Editor The Clay-Worker:

We are looking for a two-cylinder gasoline engine that will operate successfully, also on kerosene. We want a 25-h p. engine and prefer the vertical type. We like the looks of the Cook engine very well, but they do not seem to make any guarantees as to successful operation on kerosene. This cannot be a very large or heavy engine on account of the fact that it goes onto an Arbuckle clay planer and there is not a very great deal of room.

We hope you will be able to give us the names of parties making such engines, but we only want such as are good reliable engines and from good concerns.

Thanking you in advance for the courtesy of a reply, we are,

Very truly yours,
HERON LAKE BRICK & TILE CO.

PERSONAL MENTION.

John J. Bishop, of the Memphis (Tenn.) Brick Supply Co., is one of the few men who have turned from brick to the auto selling game and then come back to brick again. He likes the brick selling business and thinks there are good times ahead if they can just get the brick.

The American Face Brick Association could not have selected a better man that G. C. Mars to direct that Publicity campaign. Moreover, he has already mapped out a comprehensive plan for advertising which promises splendid results and should receive the hearty support of face brick manufacturers and dealers everywhere because it promises to help promote brick building and to educate the public taste for face brick.

J. G. Barber, of the Metropolitan Paving Brick Co., Canton, Ohio, says that it looks like the paving brick business is coming back in good shape but it takes a longer time for it to get under way than it does for building brick. Paving prospects, whether for streets or roads, take about 18 months to materialize, and that is why the call for pavers has been a bit slow up to this time. It is coming, though, he thinks, and there are unusually busy times ahead for the paving brick industry.

Among the good things which belong to the Face Brick Dealers' Association of America we may number and register a liberty bond, denomination $1,000. One of the splendid doctrines being taught by the dealers is that when a competitor falls down on the job you should help him up, not to take advantage of his misfortune, for in this way you not only make a friend out of him, but you promote a good for the brick business.

INTERIOR FACE WORK.

There is noticeable a new and growing realization of the possibilities of interior as well as exterior face work in brick and other clay products. There has long been a use of wall tile for interior finish, and there has been the occasional use of enameled brick, but apparently no conception of the possibilities which may be developed in interior face work.

There is not only the basement which may be faced on the interior with good brick or with hollow tile having its own glazed face, but in the kitchen there is an opportunity for more cleanliness and sanitation by using wall tile, enameled brick or a glazed or vitrified brick that will present a clean, smooth sanitary surface. There has been too much taking for granted that all inner walls must be plastered over and not enough effort to develop the natural beauty of brick, tile and other clay products for the interior of walls. Some attention to this during the next few years will not only make for more satisfactory interiors in certain rooms of the home but it will lessen the cost of construction and help promote the interest in clay products.

PIONEER BRICK MAN CELEBRATES.

In honor of a number of his employes who had returned from service overseas and at home, R. G. Eisenhart, president and general manager of the Consolidated Brick Business at Horseheads, N. Y., gave a dinner New Year's night. In addition to the employes of the brick company a number of the business and professional men of Horseheads and some of Mr. Eisenhart's neighbor brick men were invited, for he also celebrated at the same time the thirtieth anniversary of his entrance into the brick business. Mr. Eisenhart made an ideal host, and the occasion was one long to be remembered by all who participated. Among the speakers was M. E. Gregory, of Corning, N. Y., who paid a fine tribute to Mr. Eisenhart as a man and a competitor, and closed with the following bit of original verse:

To my old rival and friend,
Like lovers we have ever been,
Sworn rivals in our trade,
And through a score of years
We each have wooed that same elusive maid,
But always with a spirit
Which has made a strong comradeship ring true.
My friend, your loss has never been my gain,
For down within my heart has shared with you,
And your success has made me proud
That I can call you friend.
So, like the bricks we each have made,
Through all these long and busy years,
I've grown to know your staple work,
Which still cements as through joys and tears,
That friendship which old Father Time
Has not the power to stay.

SOME DISCREDITED ISMS.

This is a day of disillusionment as well as reorganization and readjustment. The turbulent times and the experiments incident thereto have brought discredit on many "isms" that have been preached and listened to and to a larger extent than they should. We have been witness to the passing of the I. W. W. ism, syndicalism and other of those isms which plainly advocate violence and destruction. Also their passing has served to discredit socialism and unionism. Many who believed they saw some fundamental truths in socialism now realize that much of the foundation was based on fallacy. Men who looked with favor on unionism have heard demands for the closed shop which have opened their eyes and brought a realization that radicalism is paving way for the ruin of unionism. Otherwise, both succeeding, it means economic ruin to the country. There is good to come from organization, whether it is industrial heads or the industrial workers themselves, and there is light to be had through study and the preaching for the beliefs derived therefrom. Experiments of the day, however, have done much to discredit the favorite isms of yesterday and these isms must either be revised and founded upon truth and actual fairness, or they must go into the discard and make way for newer and better ideas.

THE CLAY-WORKER

Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

Title registered, contents copyrighted.

THIRTY-SEVENTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " "	10.00
Ten copies, " "	15.00

Foreign subscriptions 65 cents additional.

☞Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to

226 East Ohio St. T. A. RANDALL & CO. [Inc.], Indianapolis.

Vol. 73. JANUARY, 1920. No. 1.

CURRENT COMMENT.

Make it "Full Speed Ahead."

* * *

The new year is looming up as a husky youngster.

* * *

Those seekers for some liquor with a kick in it who turned to wood alcohol found it.

* * *

The National organization should be supplemented by local organization, and these should work together and not apart.

* * *

Raiding red radicals is a good start in a good direction and now let us have the logical follow up to close traitorous activities.

* * *

The brick machinery people are just as busy as the brick people are. All are behind with their orders and are bending every energy to catch up and supply the needs.

* * *

The trade organization is an established fact. The only question of the day is that of the best form of organization and the best line of work for organization activity.

* * *

Any process or device which helps you to save either labor or fuel in brickmaking will also help you to save cost and make money. You can get some valuable pointers on all these devices at the N. B. M. A. Convention.

* * *

What is your percentage of well-burned brick in the average kiln run? Some have hung up some scores as high as 98 per cent., and every where there is a much higher average of good burns than in former years. Try checking up on this and asking your neighbor what he is doing because kiln burning is moving toward a high order of perfection.

* * *

The right to strike, like the right to free speech, comes to a time and place now and then when it needs restriction.

* * *

In handing the railroads back to the owners the government is in duty bound to also hand them some assistance in the form of constructive legislation.

* * *

The good roads people are gradually learning that the best road is one that is brick paved, because then it stays good with but little or no cost for upkeep.

* * *

Students of advertising say that three years of consistent brick advertising should create a brick consciousness in the public mind and produce an impressive and lasting effect.

* * *

On all sides we hear the report that this year is to see more building done than ever was done in a single year. Let us hope that also a larger percentage of it will be of brick and tile.

* * *

The cost of building operations has reached the point where about the only kind of building which pays is that which is made permanent. This of course means building with brick or hollow tile.

* * *

There is probably more trade near by in your home territory than you think there is. Go after this and develop it before spreading out into fields for then maybe you will have no occasion to spread out.

* * *

The great problem of the day is how to produce more brick and tile with fewer men, and in efforts to solve this problem more than the usual number of brick manufacturers are seeking labor saving machinery. Don't miss the Columbus convention.

* * *

This is no year for grouching and holding back. It is a time for every one to get up and hustle to serve the needs of the day and make it the greatest year in the history of the clayworking industry. One sure way is to attend the National Convention at Columbus.

GET TO THE PUBLIC.

One important feature to keep in mind in advertising brick and other clay products is to get to the general public and not merely strive to reach the builder or the dealer. There is a need to reach the general public for the educational benefit of advertising, and besides every member of the general public is a potential builder or at least a possible booster for the product you have to offer. In advertising to reach the general public as well as the immediate prospect you are sowing a seed from which you should reap a harvest in years to come. The public needs educating, especially to brick and hollow tile, so that when any one thinks of building they will think of these everlasting products as the proper material for the work.

HOW DO YOU SELL?

The selling end of the brick and clayworking business has always deserved more attention than it receives and with a view to directing a little specific attention to this subject here is a question you may answer yourself—"How do you sell?"

Do you sell your product direct from your own office with your own sales force, or do you sell it through dealers? In a word, are you paying some one else for the selling and of the business, or doing it yourself? Various estimates are given for the percentages of building material sold direct and sold through dealers. Some material, like lumber, is practically all sold through dealers, that is the structural part of it. Even at that, however, the lumber manufacturer must sell to the dealer. How is it with brick? Who can tell us what percentage of brick is sold direct from the plant to the consumer, what percentage goes through the hands of the dealers, and what constitutes the best order of selling organization to promote business in the right way?

PRODUCTION.

Greater production is the general goal for argument and effort these days, to the end that we may have plenty of everything and relieve the tension of high prices. There is perhaps no field of endeavor in which the need for stimulated production is more imperative than making brick and other clay products for structural purposes. There are two good reasons for this. One is, building operations have been so far behind that for several years now, more than a normal quantity of building will be necessary to catch up and provide housing for the people. The other is, there should naturally be a greater percentage of brick and tile used in building operations in the future than has been in the past. This means that taking the country as a whole the maximum production of all the plants of the country will not supply the needs next year. It is a time for speeding up production and for making machines do as much work as possible. The scarcity of help and higher wages promises to continue indefinitely, so that both labor saving and quantity production call for more machinery and mechanical devices as a means of greater production.

PROFIT SHARING.

One splendid way for the man who works to share in the profits of the industry in which he works is to be a stockholder in the concern employing him. A recent expression attributed to Lieutenant Colonel Theodore Roosevelt is that the average American who saw service in the war owns stock in the United States, and intends to take a stockholders interest henceforth. This not only sounds like the real spirit of the late lamented "Teddy," but it is good logic to apply in industry. Let the average American workman become a stockholder in the company for which he works, and he will not only be in line to share in the profits, but he will then begin to take a real stockholders interest in the business and its welfare. The average American has learned something of thrift and saving lately, and a good way to turn these thrift habits to use now is buy stock investments in the institution where one is employed. On the other hand, the far-seeing manager of such an institution will try to make the stock therein easily available for those worth while among the employees who desire to be in fact an average American citizen.

ROAD AND STREET PAVING.

The demand for paving brick has been somewhat slower about getting under way than that for building material, largely because it takes considerable time for street and road paving projects to develop after plans are started. It is estimated to require something like 18 months for road and street work to reach the point of demanding brick after the plans for the improvements have been launched. For this reason the demand for paving brick was comparatively light during 1919, but it is looking much better now. It is getting under way and promises to grow considerably during the year.

There are two good things in this connection about the good roads movement. Not only do some of the roadways call for brick paving, but good roads in turn mean better streets in the towns and cities. In other words, the building of good roads leads directly to more and better street improvement, which in turn means a larger use of paving in the cities and towns.

Road building has overshadowed street building in the plans of the day but the cities are awakening to the needs of the occasion and enough plans for improvement are already under way apparently to insure busy times in street work during the present year and this ought also to insure a good volume of trade for the paving brick manufacturers because they have been actively boosting their product and should benefit in proportion to the improvement activities.

THE BRICK OF TODAY AND OTHER DAYS.

While those actively engaged in the brick manufacturing business know when they stop to think about it that the brick produced today are vastly superior to those of older days and of past ages, the public does not seem to know this, and sometimes we are moved to a feeling that even the brick trade itself does not realize this fact as it should.

Among the things printed in the daily papers there appeared recently a rambling discourse about brick which contained among other things statements implying that the art of making brick is a lost art, and that brick of the ancient days of Egypt are far superior to the brick of today. The idea seems to have gained ground in the eyes of this writer that brick made today is for temporary use while brick made in the old days has stood the test of time, consequently it is a superior product in the art of making it which has been lost to humanity.

It is time for an awakening on this point. It is time for the brick manufacturers themselves to make a study of the subject that they may realize more fully the superior quality of the burned clay products turned out today as compared to the days of sun baked brick in the history of long ago. We have improved the product as well as the methods for manufacturing and burning, and much of this improvement has taken place in the present generation, or during the past 25 or 30 years. In fact there has been more improvement in the past 30 years than during 3,000 years prior to that time.

What we need is a keener realization of this, and then to turn about and tell the public about it so that not only the builder but the general public may be duly impressed with its important fact that the brick of today are much superior to those old brick which have stood the ravages of time through thousands of years.

STANDARDIZATION OF BUILDING UNITS.

Ernest T. Trigg, President of the National Federation of Construction Industries, is doing a good work in making a strong plea for standardizing in building and construction units. He made a plea of this kind at a recent address before engineers and architects, and it is a plea that should be heeded and given support. Standardizing makes for both economy in manufacture and lower cost in construction. The fact that both material and labor come high now adds emphasis to the importance of standardization in the building industries, not only for materials in their original form, but also in the structural units to the end that building may not be curtailed through excessive cost. The clayworking industry may well

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look to a more thorough standardization in its own products, and lend a hand in promoting the good work among all those who furnish and use material for building purposes. It is one good way to help boost building and to hold the cost within reason, and help solve the housing needs of the country today.

"POSSIBILITIES IN ADVERTISING."

An excellent piece of literature being sent out by the Common Brick Manufacturers Association of America is an address by John W. Hansell, of Philadelphia, on possibilities on advertising. This is being sent out in pamphlet form, and is worth reading by any brick man because it contains an able review of the situation today in relation to the brick business specifically and should furnish points for guidance as well as the inspiration which will lead to more advertising being done.

GOOD DEMAND FOR ARNOLD CREAGER MACHINERY.

The Arnold-Creager Company, of New London, Ohio, manufacturers of soft mud brick machinery and supplies are having a very busy season. Among recent shipments was an automatic brick machine to the Consolidated Brick Works, Horseheads, N. Y., and similar machines to the Baltimore Brick Company, Baltimore, Md., and the C. H. Klein Brick Co., Chaska, Minn. This is the fifth machine for the latter firm.

POTTERY REPORT.

The U. S. Geological Survey has issued in pamphlet form a report on the pottery industry in 1918 which contains a summary of the status of the industry during the war period. It also contains statistics of the growth of the industry during 10 years, and an interesting feature is a description of the White House state dining service, made and installed during the war. This is the first American state service used in the White House and is known as the President Wilson design because of the President's interest in the design and his suggestions concerning it. The pamphlet can be obtained by applying to the Director of the U. S. Geological Survey, Washington, D. C.

BATH TUBS AND SEWER PIPE.

One American city, Baltimore, is said to already have a building ordinance requiring all structures for homes from the modest cottage on up to be provided with bathrooms. Eventually this will be either an actual or tentative ruling in all large cities. Moreover in the small towns and on the farms there is a strong inclination toward modern development in cleanliness and sanitation. This means bath tubs, and bath tubs mean sewer pipes, water works and drainage systems. Consequently the future field for the sales of sewer pipes is looming big.

OPENING FOR A TECHNICAL EDITOR

A large national organization who wants an editorial writer in connection with their technical research and development work advises us as follows:

"We are in need of a technical editor at this laboratory with an engineer's degree from some reputable university. With at least several years of editorial work on trade papers or equivalent. General engineering experience in addition, sufficient to make a total experience of about eight years or more. Preferably between 28 to 35 years of age. It is absolutely essential that he be able to write well and handle correspondence. He must have a pleasing personality and be able to instruct others in the preparation of reports for publication. He must have ambition and energy and a reasonable amount of executive ability. Salary about $3,000 per annum to start, depending upon the applicant's general qualifications. Working conditions unusually pleasant. Seven and one-half hours a day with Saturday afternoons off all year round. Unusual freedom of action."

Applicants should submit samples of their writing or references to them and they should indicate in a general way their training and experience and other information called for in this specification.

BACK TO CLEVELAND.

THE BUCKEYE METROPOLIS is again headquarters for the National Paving Brick Manufacturers' Association. The annual meeting of the Board of Directors early in the year elected Spencer M. Duty president, to succeed Walker W. Winslow, of Indianapolis. The other officers elected are A. W. Shulthis, chairman of the Board of Governors; Will P. Blair and W. M. Lasley, vice-presidents; C. Barr, treasurer, and M. B. Greenough, secretary.

President Duty well deserves the high office to which he has been elected. He has been intimately associated with the National Paving Brick Manufacturers' Association almost from its inception. He served as Secretary of the Association from 1905 to 1907, inclusive, and subsequently has served as chairman of various important committees, and is in close sympathy with the spirit of the Association and all of its activities. He is a born brickmaker, with an exceptional talent for organization and executive work.

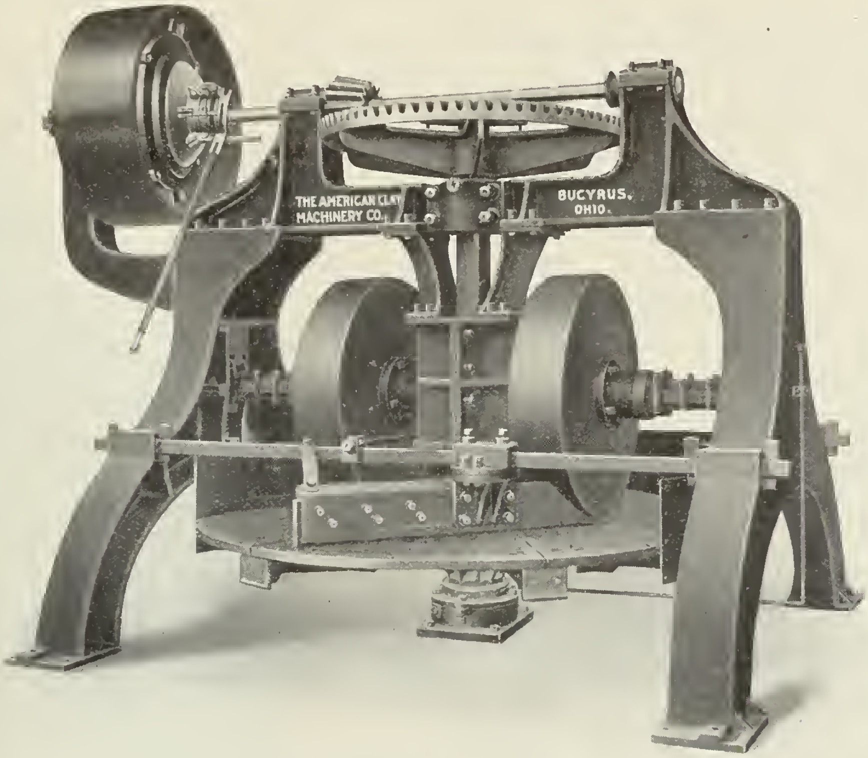
American Nine Foot Dry Pan.

If there is a better Dry Pan built than the Nine Foot American, we dont know of it.

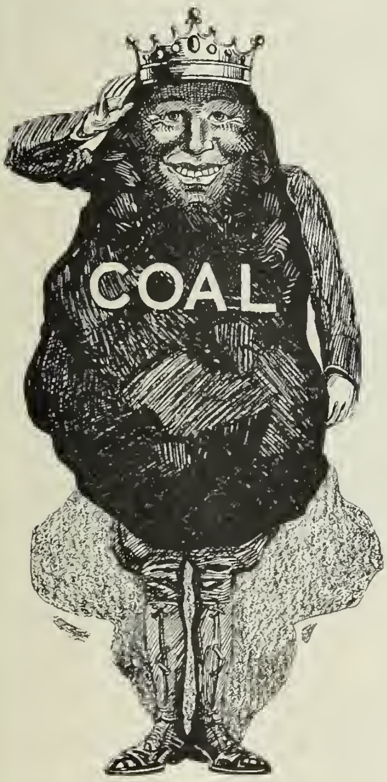
In design, material and construction there is every evidence of dependable quality, speed and low up keep cost.

We want to send you a complete description of this pan.

It will be mailed you upon request.



American Nine Foot Dry Pan.



"King Coal"

High Priced Coal.

High priced coal is here. You cant get away from using coal nor paying the price.

You can however use much less coal Since you can use half the coal it amounts to just the same as paying half the price.

The Haigh Continuous Kiln will dethrone "King Coal". The big item in your cost is burning and we can swat that cost.

Let us give you the details.

The American Clay Machinery Co.

Bucyrus, Ohio, U. S. A.

AMERICAN NO 363 REPRESS.

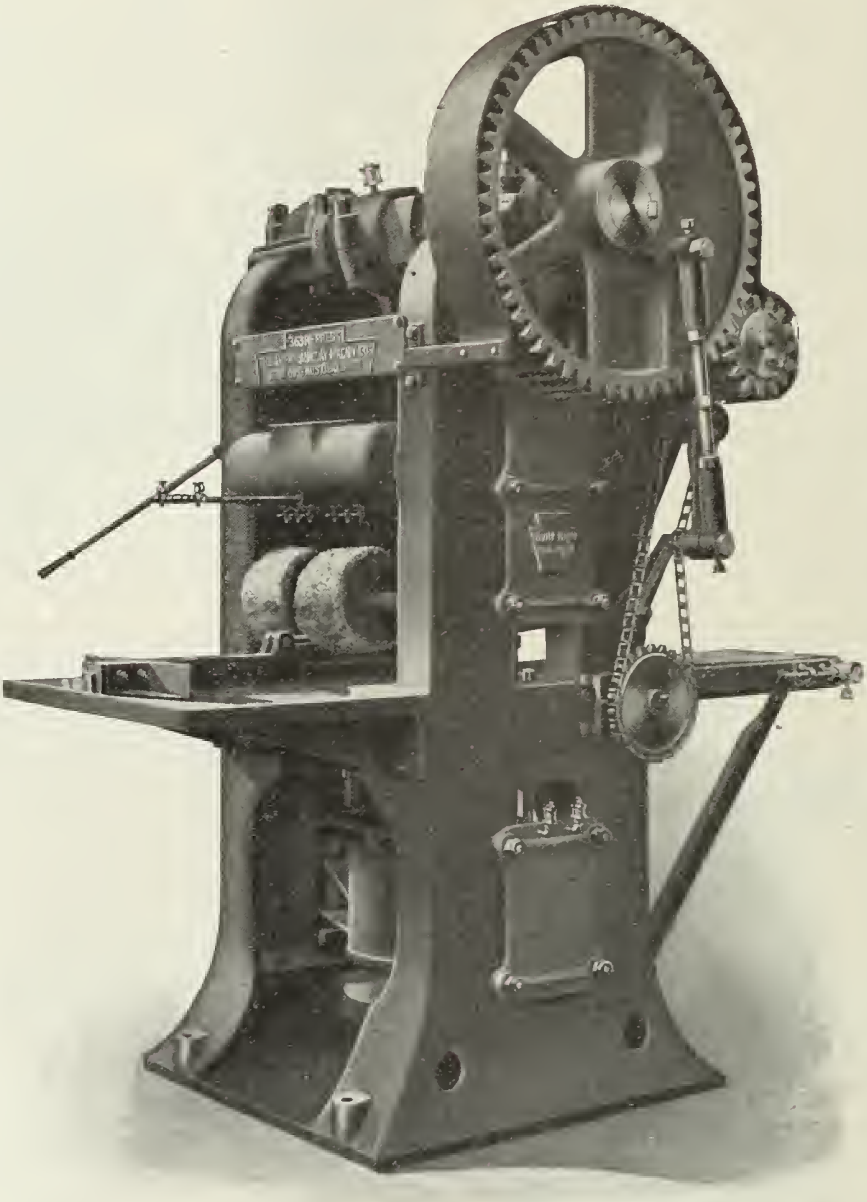
The American No. 363 Repress is the embodiment of quality. The design is the result of experience. The material is selected for the needs of a repress. The workmanship is all that a well equipped, modern factory could guarantee.

The whole press is sure to please and sure to profit the purchaser.

The side frames are ample in proportion and in material. The bearings are generously proportioned. All joints are planed and all bolts have double nuts where advisable The mold boxes and plungers are most carefully made. The gears are well proportioned and made of special gear metal.

There isnt a feature that is faulty in this press and we will be pleased to send you full description upon request

We build every machine and appliance required by Clayworkers.

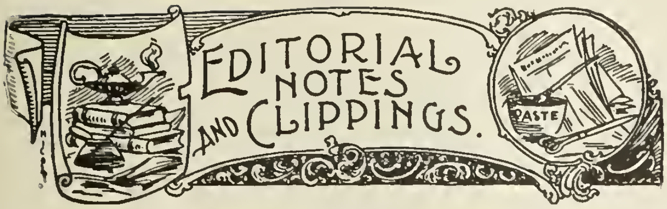


American No. 363 Repress—Front View

The American Clay Machinery Co.

Bucyrus, Ohio, U. S. A.

BUILT RIGHT RUN RIGHT



EDITORIAL NOTES AND CLIPPINGS.

The plant of the Kenilworth Tile Company, of Newell, W. Va., which was recently badly damaged by fire is being rebuilt.

The Chamber of Commerce of Nacogdoches, Texas, would like to get in touch with parties interested in starting a brick plant at that place.

A charter has been granted the Augusta Face Brick Co., of North Augusta, Ga. J. L. and Hampton Harkinson and J. L. Barksdale are the incorporators.

E. M. Smith contemplates establishing a brickmaking plant at Havre de Grace, Md., and will be glad to receive catalogues and prices on brick machinery and supplies.

The Tri-State Brick & Tile Company, of Ironton, Ohio, has been incorporated by Wm. Klein, J. A. Roth, D. J. Davis, F. W. Bryson, B. H. Boss and others. The company is capitalized at $175,000.

The Kusa Smelter Co., of Henryetta, Okla., is building a brick plant to manufacture brick for the erection of the buildings for the smelter, and after that work is finished will manufacture for the trade.

Buffalo, N. Y. is to have a new clayworking plant, The General Clay Products Company having been incorporated with $50,000 capital stock by H. S. Chaffee, C. W. Clewell and C. Baldy, all of Buffalo.

The Johnson City Shale Brick Co., of Bristol, Va.-Tenn., has been incorporated with $500,000 capital stock, by George W. Hardin, H. D. Camp, L. H. Shumate and others. J. W. Reagan, formerly of Chattanooga, is the manager of the plant.

The Brinkley Brick & Tile Co. has purchased the plant of the Morris Brick Company at Coleman, Texas. A number of improvements will be made in the plant for the purpose of increasing the output. The brick will be burned with natural gas.

W. E. Dunwody, president and general manager of the Standard Brick Company of Macon, Ga., writes that they have about finished doubling the output of their brick plant and have started a new plant for the manufacture of Universal Unit building tile.

The Shope Brick Company has been organized to erect a brick manufacturing plant at Puyallup, Wis. It is expected to have the plant ready for operation by early spring. The officers of the company are: Steve Gray, President; Dan Grey, Vice-President; Harry Moore, Treasurer

Hugo L. Siegel, formerly general sales manager for the Ford Roofing Products Company, is now with Walter A. Zelnicker Supply Company, of St. Louis, Mo., as assistant to president. The Zelnicker Supply Company handles railway, power plant, contractors' saw mill and industrial equipment and machinery of all kinds.

The name of the Mansfield Clay Products Company, Mansfield, Ohio, has been changed to the Mansfield Shale Products Co., the change being deemed advisable inasmuch as the operations of the company are confined chiefly to shale. The capital stock of the company has been raised to $300,000. The company has been unable to meet the demand for its product and will use the money raised by the sale of stock to enlarge the plant, including the erection of additional kilns, etc. W. A. Wehringer is the manager of the concern which was first started in 1909, and has succeeded beyond all expectations.

L. E. Brown and T. H. Leahy have incorporated the Brown Clay Products Co., of Canton, Ohio, with $75,000 capital stock.

The Kentucky Clay Mining Co., of Mayfield, Ky., has been incorporated with $40,000 capital stock. W. J. Watkins, P. H. Cosby and W. T. Lyell are interested.

The Hope Brick Works, of Hope, Ark., will add additional machinery for the manufacture of brick and tile, and enlarge the drying sheds. The company manufactures both brick and drain tile.

A. W. Reynolds, M. A. Saunders and J. E. Robinson have organized a company at Starkville, Miss., to establish a brickmaking plant. The company will be known as the Starkville Brick & Tile Co.

The F. R. Thomas Clay Products Company, of Memphis, Tenn., recently filed a charter for doing business as wholesale and retail merchants, with a capital stock of $20,000. The incorporators are Fred R. Thomas, J. W. and H. M. Fulghum, Erwin O. Haid and F. H. Gailor.

Announcement has been made that a Macon syndicate has purchased for $60,000 the old Charles A. Harris brick plant at Macon, Ga., which has valuable clay mines, and will operate it. The plant has been idle for some time. The syndicate is composed of A. T. Small, W. J. Massee, O. J. Massee, W. E. Dunwody and S. T. Coleman, all experienced brick men.

Announcement is made of the purchase by the Cunningham Brick Company of Greensboro, N. C., of the plant of the Alley Brick Company of that place, and purpose of the new owners to continue operation of the plant in connection with its own yards east of the city. A. W. Watson will be in charge of production at the Alley plant, while J. Harry Cunningham will continue general management of the Cunningham Company's operations.

The Lancaster Brick Company, of Lancaster Pa., has been organized with $200,000 capital stock. Work on a new plant is well under way under the supervision of James P. Martin, who has designed the plant. All of the machinery will be supplied by the Lancaster Iron Works. When completed the plant which will be operated by electricity will have a capacity of 50,000 brick per day. The officers of the company are: W. W. Posey, President; John J. Evans, Vice-President; F. L. Suter, Treasurer and Sumner L. Brown, Secretary.

Clyde and Willis Davidson, of East Liverpool, Ohio, have plans under way for the erection of a porcelain manufacturing plant at Chester, Ohio. Both gentlemen have had many years experience in the manufacture of porcelains, Willis Davidson having recently purchased the interest of Mr. Stevenson in the Davidson-Stevenson Porcelain Company, which for a number of years has manufactured a line of porcelain at East Liverpool, Ohio. The building in which the plant was located was sold recently, which necessitated a change, and Mr. Davidson bought out his partner and decided to build a plant at Chester.

Telfair Stockton and Mr. Robert Gamble of Jacksonville. Florida, have purchased the property of the Shepherd Brothers Brick Company at Columbus, Ga., and that the plant will in the future be known as the Columbus Brick and Tile Company. Contracts have been signed for machinery and other equipment which as soon as installation is completed, will more than treble the capacity of the plant. Part of the new machinery is for making the Dennison interlocking tile, which will be manufactured here on a large scale. E. M. Miller of Augusta, Ga., will be placed in charge of the plant as superintendent, and C. H. Carpenter of Jacksonville, Fla., will be in charge of the construction work as construction engineer.

The Pittsburgh Clay Products Co., of Pittsburgh, Pa., has increased its capital stock to $100,000.

J. T. Jackson, E. W. Bookman, W. E. Skidmore, E. B. McHenry and others are the incorporators of the Standard Porcelain Co. of East Liverpool, Ohio.

According to the Tribune of Lemmon, S. Dak., there is a good opening in that town for a first-class brick plant. The clay has been tested with gratifying results.

Robert W. Goforth, of Athens Tenn., writes that he is going into the brick business at that point, and will be interested in catalogues of machinery and supplies.

The Purington Paving Brick Company's plants at Galesburg, Ill., which were closed down the first of December on account of the coal shortage, were started again December 29.

The Seaboard Shale Brick & Tile Company of Stouts, N. C., has been incorporated by E. D. Latta and W. C. & E. M. Hinson, all of Charlotte, N. C. The company is capitalized at $200,000.

The Mid-Continent Brick & Tile Company, of Tulsa, Okla., will enlarge their plant, installing a clay crusher and making other improvements to increase the capacity of the plant to 40,000 brick per day.

The Standard Brick Company has been incorporated and taken over the plant and business of the Thomas-Wetherill Tile & Brick Co., Inc., of Rosenhayn, N. J. The plant is up to date in every particular and has a capacity of 100,000 brick per day.

The American Fire Brick Company of Spokane, Wash., had a very busy year during 1919. They estimate their output at 3,120,000 hollow building block, 2,000,000 fire brick, 1,000,000 drain and partition tile and 300 cars of sewer pipe, for all of which they found a good market.

The Selby Silo Company, of Bourbon, Ind., has purchased the plant of the Maumee Brick & Tile Company at Fort Wayne, Ind., and will move to the latter place, where new buildings will be erected and the old plant be remodeled and brought up to date for the manufacture of silo tile.

William C. Coxon, for twenty-seven years superintendent of the Great Western Pottery at Kokomo, Ind., retired from active management of the plant the first of the year. He still retains his interest in the business and will be able to give expert advice when needed. The employes of the plant presented Mr. Coxon with a gold watch and a handsome traveling bag as a parting gift of appreciation.

George O. Berry will make a number of changes and improvements in his plant at Columbus, Ga., not only to increase the number of brick turned out, but will add an equipment for the manufacture of hollow building tile. Mr. Berry's plant is the oldest clay plant in Columbus, and he believes in keeping it up to date in equipment and output. He is a regular attendant at the N. B. M. A. conventions and will be on hand at Columbus next month.

The Poindexter Brick Company, a large corporation, of Elkins, W. Va., which was recently chartered with an unauthorized capital of $15,000 held its first meeting on January 7th and elected officers as follows: President, Dr. J. W. Ring; Vice-President and General Manager, R. L. Poindexter; Treasurer, Alex Chatham, Jr.; Secretary, J. F. Hendren. This plant will be in operation at an early date, and will supply one of Elkin's most important needs, as scarcity of brick has hindered the building operation seriously. Mr. Poindexter is thoroughly experienced in the manufacture of brick and the business is an assured success.

This gives Macon four brickmaking plants, with a combined output of close to 550,000 bricks daily. Announcement has also been made of the retirement on January 12 of Marion H. Massee, as president of the Massee-Felton Lumber Company, one of the largest concerns of its kind in this section of the country. Mr. Massee will become associated with W. J. Massee, Jack Massee and M. H. Massee, Jr., in the formation of a new company, to be known as the Massee Brick and Tile Company, which will have the exclusive sale of the products of the Bibb Brick Company, and will add several other lines. The Bibb Brick Company has heretofore sold its products through the Standard Brick Company.

James B. Porter, of Norfolk, Va., is in the market for a small brick machine.

L. R. Harrison, of Portland, Ore., is interested in establishing a brick plant at Pendleton, Ore.

H. M. Franks and R. F. Fleming plan to build a brick manufacturing plant at Laurens, S. C.

The Duffney Brick Company of Mechanicsville, N. Y., has increased its capital stock from $60,000 to $100,000.

C. D. Meadows, Executive Secretary of the Chamber of Commerce and Agriculture, Gaffney, S. C., wants data and prices on brickmaking machinery.

The Mannington Pottery Company at Mannington, W. Va., of which George W. Powers is president, have plans under way for building six additional kilns.

Arthur S. Brown, 2529 Central avenue, Pittsburgh, Pa., manufacturer of gas log, would like to get in touch with manufacturers of paints and coloring matter for potters.

The Shale Brick Company of Columbus, Ohio, with $100,000 capital stock, has been incorporated by W. T. Brown, W. C. Gager, L. R. Haag, R. M. Barrett and E. Terry.

The plant of the Cleveland Clay Co., located at Cuyahoga Heights, a suburb of Cleveland, sustained a $50,000 loss by fire recently. The burned portion will be rebuilt at once.

The immense new plant of the National Clay Co. at Mason City, Iowa, is now in full operation. It was built on the site of the old plant, which was destroyed by fire about a year ago.

The Horton Pottery Company of Chillicothe, Ohio, has been organized with $60,000 capital stock by Christopher, Florence and Charles M. Horton and James F. and A. H. Machin.

A. H. Cope, building inspector of Decatur, Ill., is interested in a movement for the establishment of a common building brick plant at that place. There is a demand for common brick in that vicinity, and Mr. Cope hopes to be able to market them at a less price than such brick are being shipped into Decatur.

The Washington Brick, Lime and Sewer Pipe Company of Spokane, Wash., reports that the year 1919 was a record-breaker. This company operates five plants in and near Spokane, the combined output of which was 450 cars of face brick, 600 cars of common brick and 850 cars of sewer pipe, besides $150,000 worth of terra cotta.

S. B. Dobbs, dealer in high grade face enamel and paving brick, of Philadelphia, announces that beginning with January 1st he took over the exclusive selling agency in his territory of the Williamsgrove Brick Co., of Bigler, Pa., the original manufacturers of Tapestry brick. This enables Mr. Dobbs to furnish buffs, greys and goldens in rough texture as well as very light smooth brick in large quantities, in addition to their regular line of smooth and rough texture red brick, solid colors and mingled shades, iron spots and enameled brick. Mr. Dobbs is at present enjoying a little vacation in Florida, but he will return north in time to attend the N. B. M. A. convention at Columbus.

JOHN BOYLE JR.

Attorney-at-Law

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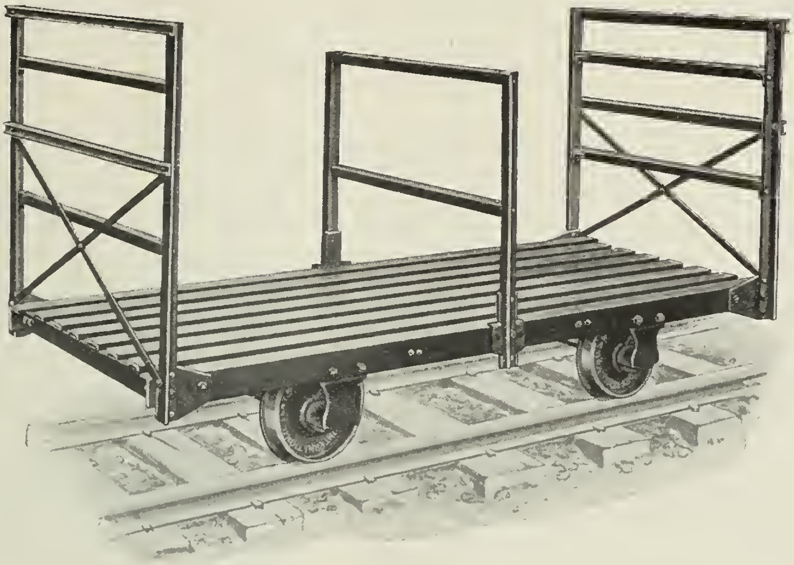
Washington, D. C.

16 years on the examining corps of the United States Patent Office.

WHAT IS YOUR TILE BREAKAGE?

Figure Up What It Costs You a Month in Broken Tile or Hollow Ware on Account of Using Cars with Open Ends.

Interest on Rather a Nice Investment—Eh?



An International Style "M" Car

That Isn't All Either—the Rocker Bearing "Makes Your Track Level." Compare International's New Cars with Your Present Ones and Write

International Clay Machinery Co.

DAYTON, OHIO

PACIFIC COAST NEWS.

THE BUILDING PROGRAM for San Francisco for the year of 1920 is of considerable interest to those who are included in the clay industry, for a large part of the construction during the next year will, undoubtedly, create a demand for clay and brick building materials. An estimate of proposed building activities to be commenced this year in the cities of the Pacific Coast shows a sum of one hundred and fifty million dollars will be spent; and that over half of this amount will be represented by new structures in San Francisco and the territory immediately surrounding. A number of large office buildings are planned for the commercial section of the city, while no less than four large theaters are planned, which will, alone, cost about $4,000,000 to build. A good many more apartment houses are needed before the housing problem is solved, and plans which are to be found in architects' offices reveal a demand for quantities of brick and clay building materials.

Wellington Hull of Boston, Mass., is now visiting at San Luis Obispo, Cal., in the interests of capital, which, it is said, is planning to invest in that city by the erection of a plant for the manufacture of chrome brick.

In a petition directed against a number of southern California gas and electric companies the American Encaustic Tiling Company of Vernon, Cal., has applied to the State Railroad Commission for an order which will classify the tile plant as a preferred industry in the use of natural gas. The concern claims that gas is the only fuel which it is able to use in the manufacture of tile.

A new production has been announced by Frank Costello, president of the California Pottery Company of San Francisco, Oakland and Fresno, manufactured from terra cotta in the form of a "stock" facade for buildings. A number of styles are developed in order that the builder may have variety, and production is considerably lower in cost in turning out the facades, thereby enabling the builder to erect a structure needing a product of this character at considerably less expense than the old method.

It is rumored that the Alberhill Clay & Coal Company of southern California is considering the erection of a pottery at Riverside, Cal., which will furnish employment for between two and three hundred persons. The concern already has a large plant at Alberhill, but with the manufacture of pottery, which is a new departure for the Alberhill interests, it is thought that the Riverside location will be a favorable addition to the organization.

The Chamberlain Brick Company has been incorporated at Long Beach, Cal., with a capital stock of $25,000. The directors of the new concern are J. J. Chamberlain, Philip L. Bixby and Laura M. Chamberlain.

Reports from the Richmond Brick Company of Richmond, Cal., are to the effect that the company has concluded an extremely active year. Various labor difficulties, which were experienced by all other firms, however, kept the concern a little behind on orders, which have been coming in fast, especially during the latter half of 1919.

The Pacific Porcelain Ware Co., also located in Richmond, Cal., is another California concern which has been working at capacity this year, catching up on back orders. Even now, with the labor situation bettered to some extent since the strike in the Oakland shipyards, L. J. Waldear, assistant factory manager, states that orders are still ahead of the company's output.

The Ione Fire Brick Company, which maintains its factory at Ione, Cal., has concluded a record year for the manufacture of fire bricks. It is said that this concern has manufactured over 3,000,000 bricks in the five kilns that have been used. Although the kilns have a capacity of but 11,000 bricks per day, Ione workmen have molded 20,000 daily since the opening of the plant on the 20th of March—and the surplus will be fired during the winter by a force of 25 men, which will be kept until the opening of the 1920 season.

John P. Rowe, originator of the Sieberling Potteries of Ohio, is the superintendent of a newly organized pottery and chinaware plant which is to be located at Long Beach, Cal. With him will be associated Frank P. Howard, who is known to the industry as the representative of the Liverpool potteries and the Cieberling interests in the far eastern division of the United States; and John E. Spencer, who will be known as the general manager of the new California company.

The present output of plant No. 4 of the Los Angeles Pressed Brick Company, which is located in the Alberhill district of Riverside, Cal., is 30,000 fire bricks per day, 20,000 face brick and 100 tons of tile. Nine kilns are now operating and it is expected that about six more will be added during 1920. All the government buildings which are now under course of construction in San Diego for the marine base are being built of tile which is supplied by the Los Angeles Pressed Brick Company; and plant No. 4 is now occupied in supplying the needed product. It is estimated that at least 400 carloads will be required.

A company has been organized at San Diego, Cal., which is known as the Terra Cotta Tile and Brick Corporation, for the purpose of acquiring the property and plant of a copartnership formerly operating as the Sunnyside Brick and Tile Company. SUNSET.

San Francisco.

THE GALION UNLOADER
"SPEEDS UP" PRODUCTION

Releases all shovelers for more productive work. With this outfit only one man is required to unload a car of coal in 2 to 3 hours. Cuts coal handling cost from 25c to 35c per ton to 4c per ton or less.

The Galion Unloader can be adapted to meet the requirements of practically any clayworking plant.

Write for our Unloader Bulletin.

INDUSTRIAL DIVISION
THE GALION IRON WORKS & MFG. CO.
204 Wyandot Building, Galion, Ohio.

The Modern Way
1. Only one central coal location
2. Clean kiln yard
3. No cleaning of furnaces or re-lining them, or bag walls ever required
4. Minimum labor attention and responsibility
5. Much shorter kiln burning periods
6. Heavy saving of fuel
7. Increased burning capacity without additonal kilns
8. A better and more uniformly burned product
9. Avoids smoke nuisance absolutely,
10. And many other advantages
PRODUCER HOUSE
The Old Way
1. Excessive and wasteful burning conditions
2. Requires wasteful manual labor
3 Longer kiln burning periods
4 Uncertain burning results
5. Expensive product wasted through improper burning
6. Heavy kiln repairs needed
7 Unsightly conditions, etc.

THE DAY OF FIRING KILNS BY HAND IS PAST

Hand firing kilns in most clay plants is tremendously wasteful. You are dependent on human element by hand firing—that means longer time than necessary. It is also impossible to get complete combustion by hand firing, and this results in a big percentage of fuel waste; besides, hand fired furnaces require many men where the plant is reasonably large, which are high priced and hard to get. Both of these problems and many others, too, are solved completely by the

UNDERWOOD PRODUCER GAS SYSTEM
(Patented)

This highly efficient patented equipment puts an end to wasted fuel by getting the very last unit of heat out of each ton of coal. It saves as high as 30 to 40 per cent. of coal, and similarly in labor in comparison with hand fired methods.

Our Gas System saves fuel because of its distinctive patented construction, insures completeness of combustion. It puts the maximum of generated heat in the kiln, thereby saving a big percentage of the heat energy that in hand fired furnaces is wasted in many different ways. Our Gas System cuts the cost of fuel requirements in another way by reducing from 40 to 50 per cent. of the time required for water smoking and burning, and it eliminates the smoke problem entirely.

The degree to which our Gas System saves labor is demonstrated by the fact that the coal can be brought from the railroad cars direct to the gas producer platform automatically, thus not only eliminating man-power, but also horses, carts, trucks, etc. Moreover, one man per shift can look after the burning of a dozen kilns and do it far better than six or seven men by hand firing.

Our Gas System reduces kiln investment when a greater burning capacity is desired or required, for it will accomplish with six kilns that which requires eight kilns when hand fired, and at the same time prolongs the life of the kilns indefinitely since furnaces do not burn out, bag walls are not melted down, crowns are not wrecked, there are no furnace irons to burn out, no furnaces to clean. Our Gas System has plenty of reserve capacity. It requires no auxiliary draft equipment. It is a time tested device that is already saving money for scores of well-known concerns, and has proven beyond any doubt the most profitable piece of equipment ever installed in a clay plant.

Peace did not end the labor or transportation problems by far. Coal must be conserved, and the labor end controlled, so take the step now that will help insure maximum efficiency in your plant, and send for full facts about the Underwood Producer Gas System. We can save you money—let us show you how.

The Manufacturers Equipment Co.
Dayton, Ohio, U. S. A.

Drain Tile Manufacturers

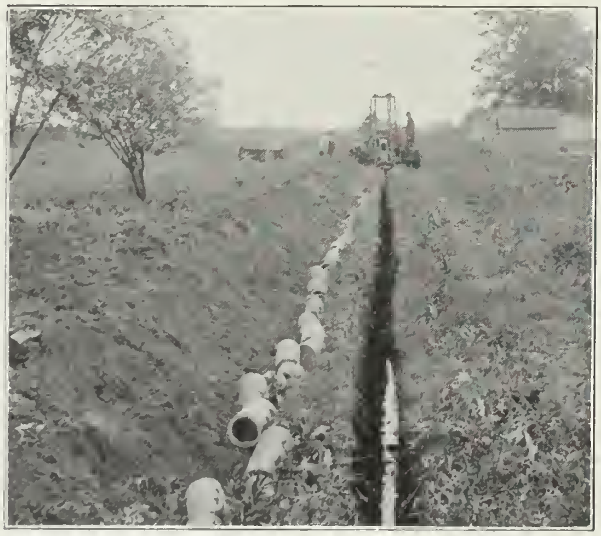
Help The Farmer
With His Tiling

One Day's Work of Ditching Machine

YOU can sell more tile and have them laid properly, thus assuring absolute satisfaction and at the same time make profits by operating a ditching machine.

WHEREVER there is a tiling machine increased demand for tile is found.

A TILE manufacturer states he makes more profit from his tiling machine than he does from his tile. He owns two plants and operates several Buckeyes. He is going to order another machine soon. He has no trouble getting contracts and uses up more tile than he can produce.



A Perfect Trench at One Cut

The Buckeye Traction Ditcher Co.

FINDLAY — Why Dont You Investigate — OHIO

NEW JERSEY CLAY MINERS AND MANUFACTURERS MEET.

THE ANNUAL MEETING of the New Jersey Clay Miners' and Manufacturers' Association was held at the Elks' club in Perth Amboy. A dinner was served at the club prior to the business meeting. These officers were reelected for the coming year:

President, L. H. McHose, of the McHose Clay Company, Perth Amboy; vice-president, F. R. Valentine, of M. D. Valentine & Brother, Woodbridge; treasurer, August Staudt, Perth Amboy Tile Works; secretary, M. M. McHose, of the McHose Clay Company, Perth Amboy.

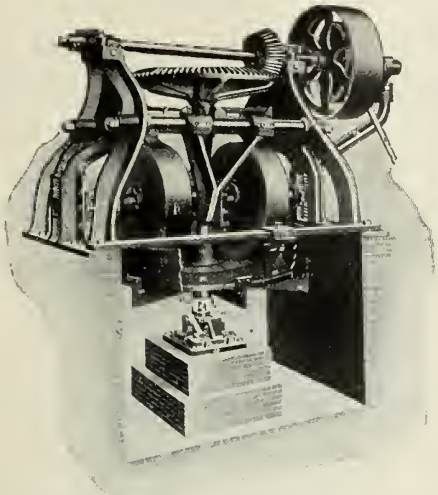
President McHose, in accepting his re-election, called attention to the growth of the organization. Within a few years it has grown from fifteen to fifty members and is still increasing its membership. Meanwhile, its usefulness has increased proportionately and it is now doing more good for the clay trade of the state than it ever has done in the past, while its possibilities for the future are even more promising. He called upon all members to help in the work of the coming year and emphasized the fact that the co-operation which has been given in the past has been responsible for most of the growth of the organization and the development of its growing usefulness.

The organization urged upon the state the necessity for the ceramics school building and the question was asked who would go to Trenton to help in developing the sentiment in favor of this project.

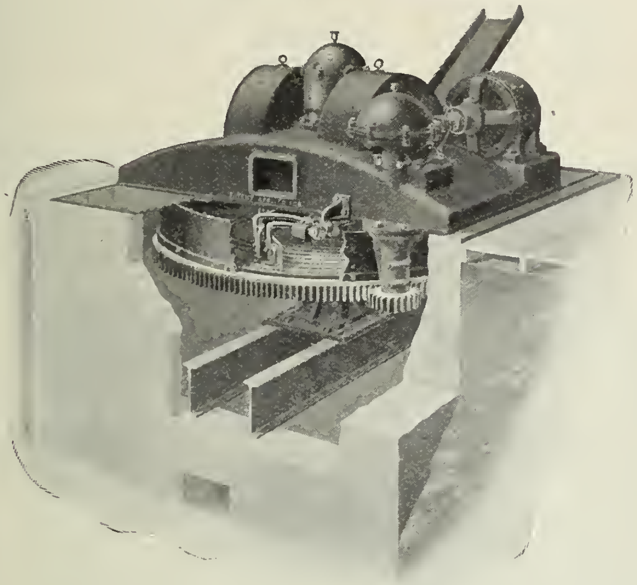
All the speakers agreed that this is an era when business men must get together and urge their own ideas upon the people, and secure their enactment into laws if they hope to keep their business progressive and the country developing at the same time. Those in attendance were:

Prof. George H. Brown, director of the department of ceramics, Rutgers College, New Brunswick; F. W. Schmidt, Didier-March Company, Perth Amboy; John Pfeiffer, Henry Maurer & Sons, Maurer; C. Von Hartz, Didier-March Company, Perth Amboy; L. H. McHose, of the McHose Clay Company, Perth Amboy; H. R. Valentine, M. D. Valentine & Brother, Woodbridge; A. Clayton Clark, Raritan Copper Works, Perth Amboy; M. M. McHose, McHose Clay Works, Perth Amboy; Charles A. Bloomfield, Bloomfield Clay Company, Metuchen; F. B. Aller, Perth Amboy; Charles W. Crane, C. W. Crane & Co., New York; R. L. Clare, Federal Terra Cotta Company, Perth Amboy; August Staudt, Perth Amboy Tile Works, Perth Amboy; Linn Rossi, Perth Amboy; Abel Hansen, Fords Porcelain Works, Perth Amboy; W. Guy Weaver, Perth Amboy; State Senator Thomas Brown, Perth Amboy; James H. White, Perth Amboy; Captain C. B. Cannar, Raritan Arsenal, Metuchen; James J. Livingood, Jr., Perth Amboy; J. T. Ryan and R. P. Grace, Mutton Hollow Brick Company, Woodbridge; Otto W. Will, Roessler & Haslacher Chemical Company, Perth Amboy; Victor W. Main, National Fireproofing Company, Perth Amboy; George Parsons, Perth Amboy; L. E. Riddle, Jr., Metuchen; W. G. Demarest, Metuchen; Henry F. Koch, Perth Amboy; F. F. Anness, Anness & Potter Clay Company, Woodbridge; Jack M. Klein, Perth Amboy; E. C. Dalrymple, Raritan Ridge Clay Sand Company, Metuchen; A. Ammann, Such Clay Company, South Amboy; Frederic D. Hahn, C. W. Crane & Co., New York; R. H. Minton and Fred Whitaker, General Ceramics Company, Metuchen; P. C. Beuchner, Crossman Company, South Amboy; R. Q. Rue, South Amboy, and others.

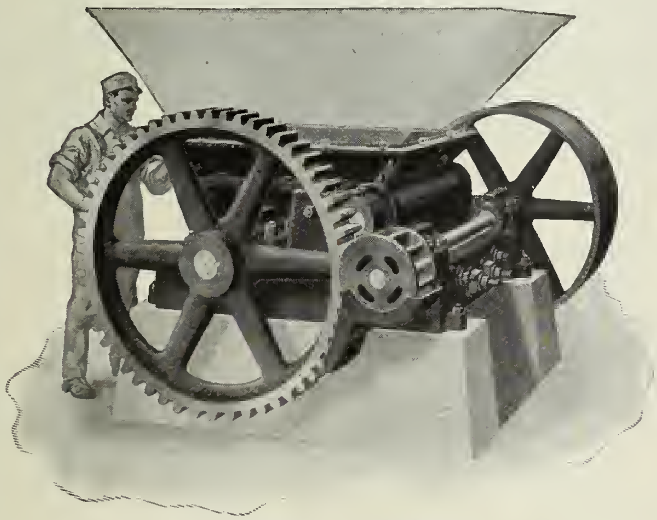
A rather familiar newspaper phrase these days is that which says: "A shortage of brick exists."



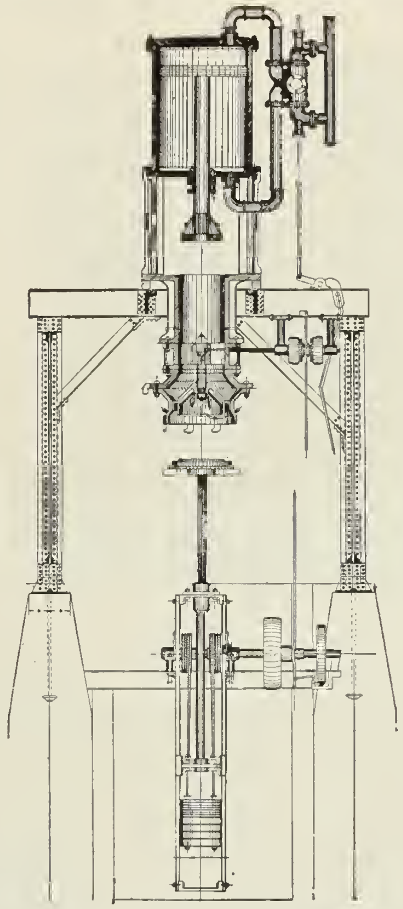
Standard Grinding Pans Made all Sizes



Model A-300 Step Bearing Type Dry and Semi Dry Grinding Pan



Single Roll Crusher



Sewer Pipe Press

Machines for
Crushing,
Grinding,
Pulverizing,
Empounding,
Tempering,
Mixing and for

Elevating and Conveying all kinds of Materials.

Steam Presses for Making Sewer Pipe, Drain Tile, Hollow Block, etc., are Manufactured by

THE STEVENSON CO.,

Gen'l Office and Works **Wellsville, Ohio**

Engineering and Western Sales Office,
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1920

"Next spring will see unprecedented building movement, except in a few trades the demands far exceed the supply, and orders have been placed for delivery as far ahead as 1921. Dwellings, plant construction and public buildings continue to lead in activity."

(Extracts from bulletin 28, published by the American Exchange National Bank, New York City, January 1, 1920.)

Our 1920 program for the development of the famous "Martin" machinery, for the production of soft mud building brick, is completed.

Be sure to get our specifications and proposals on any equipment you require.

SOFT MUD BRICK MACHINES

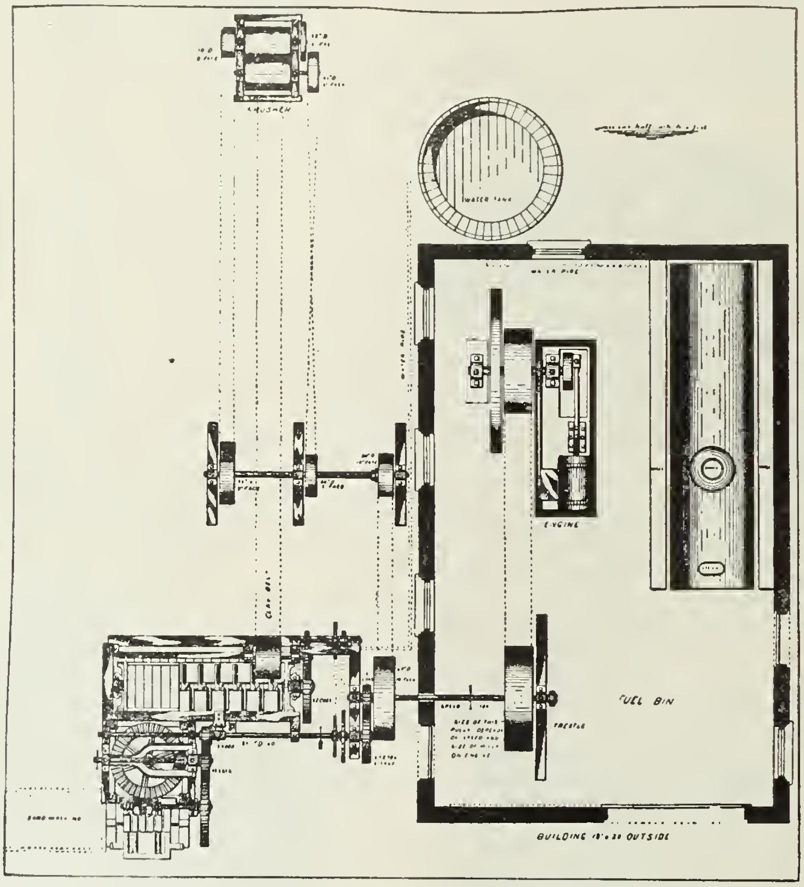
Developed from the original "Martin" design. Heavy and powerful. They will produce 50,000 bricks every working day in the year with minimum labor, power and repairs.

PUG MILLS.

All iron and steel construction. Liberal shafts and bearings. Gears with broad faces and substantial pitch of teeth.

DISINTEGRATORS.

The famous "Parry" design. Originated by a practical brick maker. The most highly developed Disintegrator on the market. Investigate the specifications of this machine, and note the very substantial construction.



The Famous "Martin" 100-A Plan.

PIPE RACK DRYER

Developed from the original "Martin" design. Built of the best materials obtainable for the purpose. The ideal Dryer for economically handling and drying soft-mud brick. Originators of the low pressure vacuum system.

CABLE CONVEYOR SYSTEMS.

For conveying pallets of soft mud brick to Dryers or open air racks. Saves labor. Protects the brick.

CAR SYSTEMS.

For delivering brick from Dryers or racks to kilns with less labor and better handling of the brick than any other system used.

LANCASTER IRON WORKS

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New York Office,
501 Fifth Avenue

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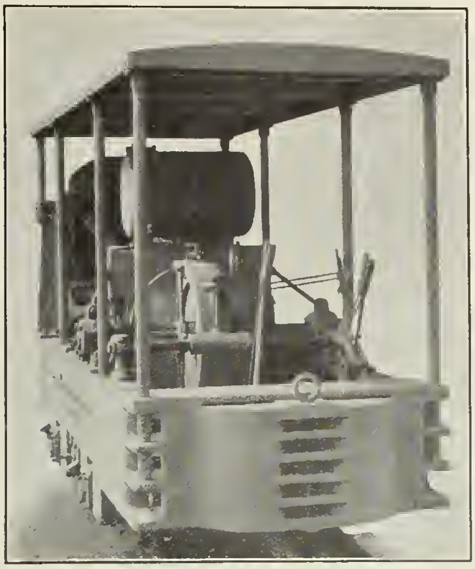
Clayworking Machinery Dept.

Join the National Brick Manufacturers' Association

Join the Common Brick Manufacturers' Association

Gasoline and Kerosene Locomotives

Made for any Gauge Track
Sizes from 3 to 12 Tons
Use either Gasoline or Kerosene

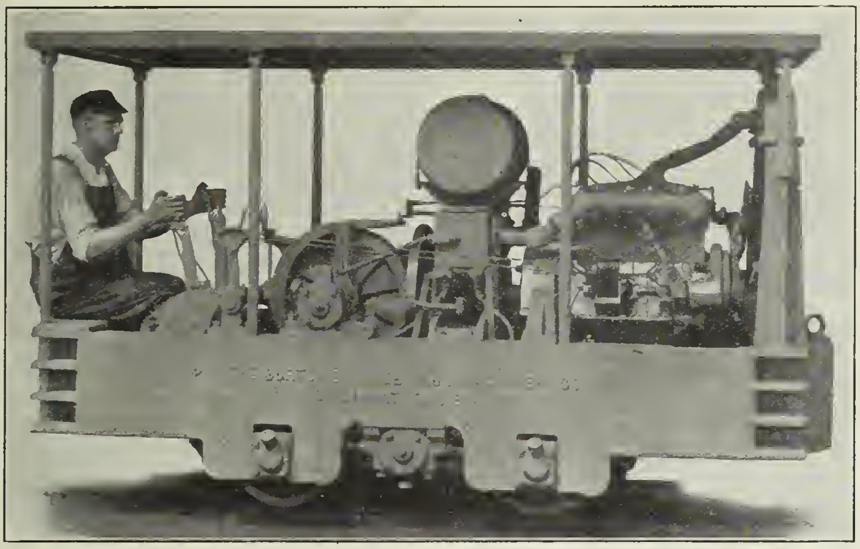


Eliminates:

All complicated parts
All Gears, Differential,
Clutches, Licensed Engineers,
All trouble.

BURTON

Means Economy, Durability, Simplicity



Burton Class "D" 3½=Ton Gasoline Locomotive.

Advantages;

Simplicity in construction and operation.

Any speed, forward or backward, equal power in both directions.

All parts accessible for cleaning and adjusting.

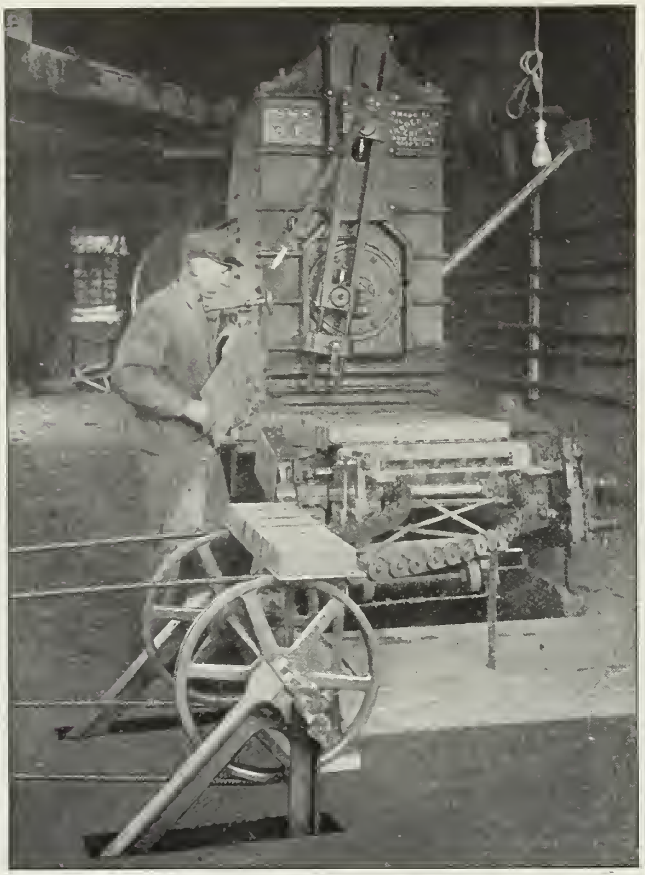
Low cost of up=keep and operation.

Complete Specifications and Prices on Request

A Burton Locomotive will cut Your Haulage Cost 50 per cent.

The Burton Engineering and Machinery Company
CINCINNATI, OHIO, U. S. A.

The S. S. S. Special Automatic Soft Mud Brick Machine



"We manufacture the most complete line of Soft Mud Brick Machinery in the world and can meet the requirements of any size yard, from the smallest to the largest.

Let us quote you on your new machinery.

The Arnold-Creager Co.
New London, Ohio.

HEARD IN NEW ENGLAND.

According to the observation of a number who have been over the ground lately the situation in New England, taking all six states, is more or less acute. Few localities will have anything to offer early in the season, and if the labor shortage which has been so troublesome, continues the coming season the number made will be somewhat restricted. Prices have ruled high and are still high, with quotations in some localities going up steadily. The demand in and around the large cities continues active and sales are made only in a small way at high values.

The price in and about Boston is advancing. Quotations are now up to $24.00 to $25.00 and are still going up. These figures are largely nominal since demands exceed supply. The shortage of labor has been an important factor in the present high prices, while lack of fuel in some places and transportation difficulties everywhere are creating anything but a promising condition. More large buildings are under construction in Boston than for years and numerous large projects are under consideration for the coming season.

Western Massachusetts is so short of brick that some dealers say they will command almost any price within the next few weeks. Buyers have hard work to get anything and they are seeking stock wherever they can get even a few. And prices are going up all the time. In some of the western Massachusetts towns prices as high as $30.00 a thousand have been paid and these figures may be exceeded at any time. With numerous buildings going up and no brick the situation is one that worries builders.

Springfield, Mass., dealers say that they have almost nothing in hand and that with present demand continuing unabated for any length of time they will be able to secure any price they choose to ask. Many large buildings are in progress and more are to come in the spring. The outlook is distinctly unfavorable for the man who has no brick, but is seeking stock for immediate use.

Russell A. Bailey, treasurer of the Springfield Brick Company, says that his company usually has about 8,000,000 brick on hand at this season, but this year they have no more than one-fourth that. Brick manufacturers in this section are refusing outside orders to enable their own builders to acquire as many brick as local firms can supply.

Hartford, Conn., is asking as high as $22.00 for its brick, and even that price fails to bring out any considerable quantity. Movement into consumption has been very large all the season, and even now, with the winter season on, it is still active and prices are tending upward. Buyers are unable to secure anything like the quantity they want and manufacturers have no surplus to help them. The situation has become very acute under these conditions, and is not improving at all.

New Haven, Conn., has many large building projects under consideration for this year. It draws principally upon the North Haven plants for its supplies, but they are unable to satisfy more than a part of the requirements. In fact, they are bare of supplies. The quantity available is so small that it cannot be a factor in the situation for early spring. Prices range from $20.00 to $22.00 at the yards and $25.00 delivered, though this is an extreme price. Some interests say that prices will be higher than that in the near future, the scarcity is so great.

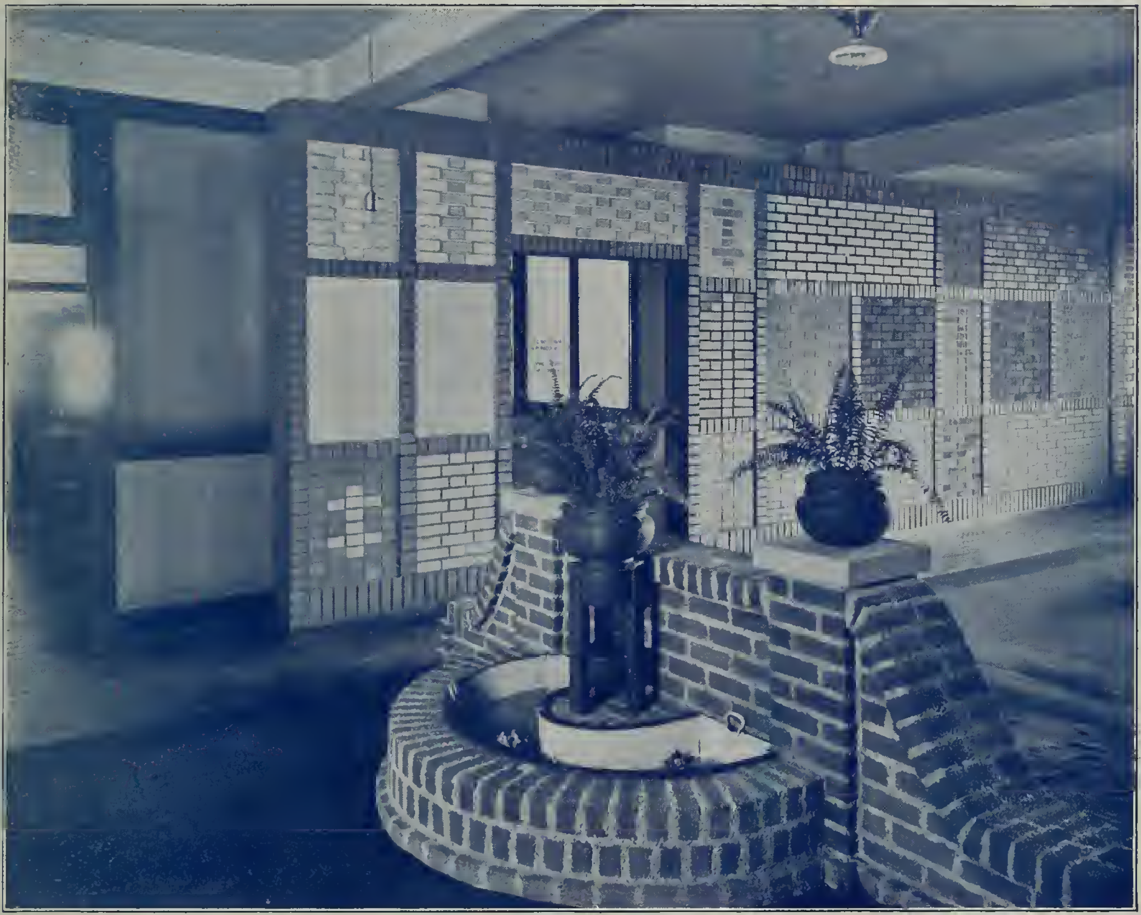
HIRAM.

The cement folks are looking toward the export trade for the disposal of part of their product. This we believe is one of the best ideas that has lately been advanced in connection with the cement industry, the more they ship abroad the better.

Engineering Library

FEBRUARY 1920

THE CLAY-WORKER



A FINE DISPLAY OF FRONT BRICK: Reception Room of the Claycraft Mining & Brick Co., Columbus. See page 150.

Published Monthly by
T. A. RANDALL & CO.
INDIANAPOLIS, IND.
OFFICIAL ORGAN OF THE N.B.M.A.

Published monthly. Subscription price, $2.00 per year. Entered as second class matter, January, 1884, at the post office at Indianapolis, under the act of March 3, 1879. Title registered and contents Copyrighted by T. A. Randall & Co., 1919.

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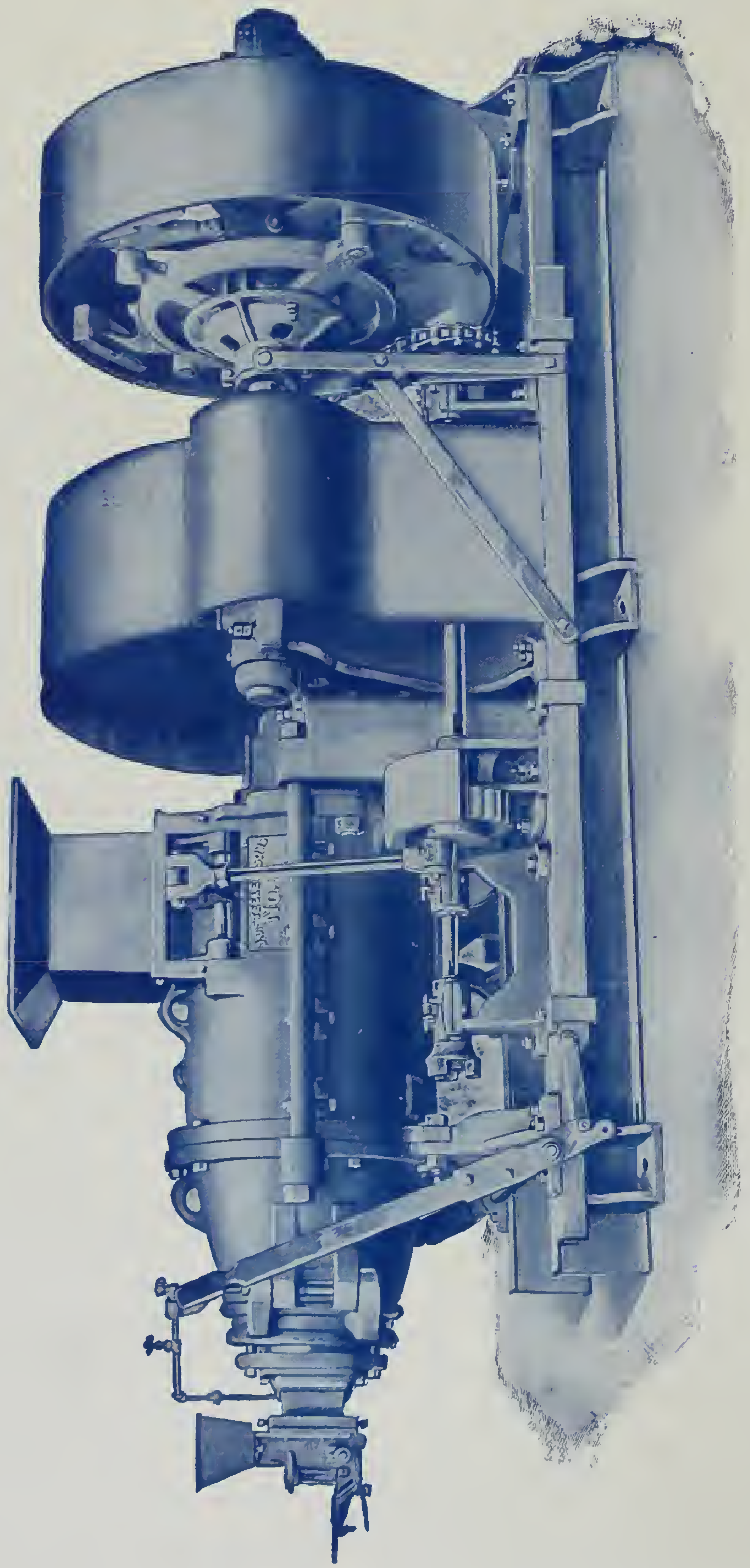
THE SOLITARY No. 6.

IN A CLASS ALL ALONE



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THE CLAY-WORKER

THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 73. INDIANAPOLIS, FEBRUARY 1920 No. 2

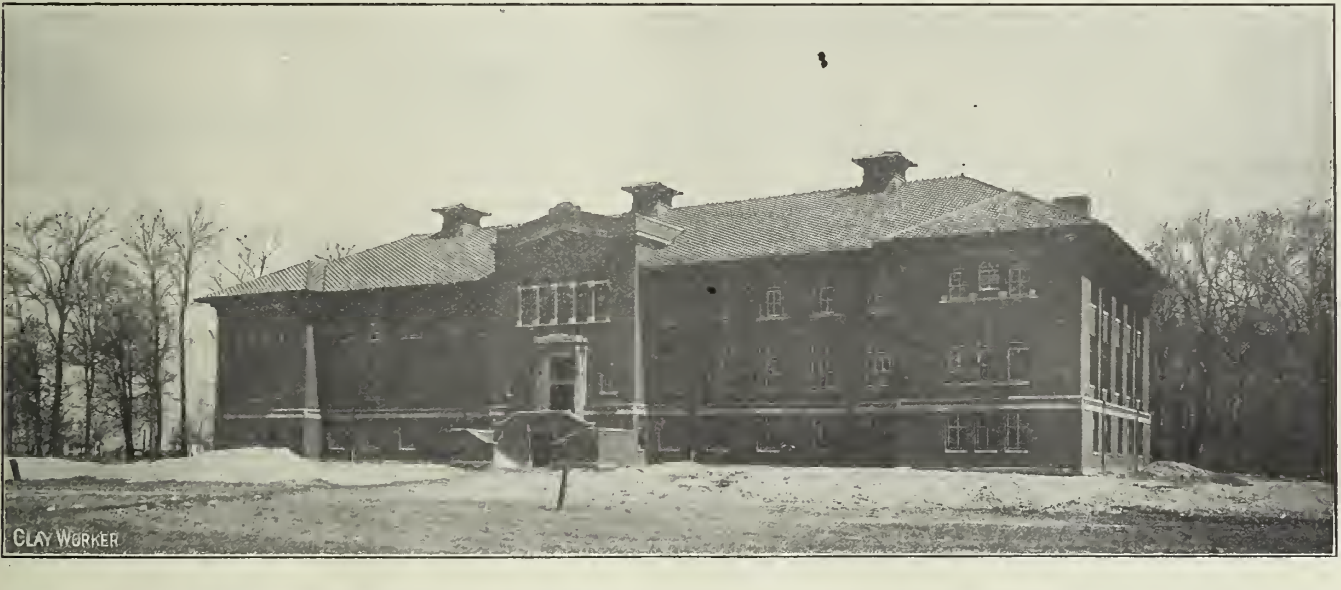
THE 1920 N.B.M.A. CONVENTION CITY: Pertinent Facts Concerning America's Oldest Ceramic School, and the Experiment Station of the U. S. Bureau of Mines, Ohio State University, Columbus, Ohio, Which will be Inspected by Delegates Attending the Coming National Convention.

THE Ohio State University, the first school to offer a ceramics engineering course, celebrates her Golden Anniversary next October. The passage of 50 years finds the institution with an unprecedented enrollment of 6,608 students and with 34 buildings and 600 acres of land while appropriations have been made by the Ohio Legislature for two more. Courses are offered in 11 colleges—Agriculture; Arts; Philosophy and Science; Commerce and Journalism; Dentistry; Education; Engineering; Medicine; Homeopathic Medicine; Law; Pharmacy; and Veterinary Medicine—and in the graduate school.

The history of Ohio State dates back to the Morrill bill of 1862 that provided for land grant colleges. Franklin county's gift of $500,000 determined the location in 1870, while the presence of a good spring, still flowing, is said to have influenced the trustees in choosing the exact site, near the present city of Columbus, then but a town. Although "The Ohio Agricultural and Mechanical College" was the official title, the institution was derisively termed "The College in a Cornfield" because it was so far from the town limits. On September 17, 1873, the college was opened and 17 students enrolled, the year's total being 54 of whom the majority took the preparatory work then offered. Six students, four of whom are still living, comprised the first graduating class, in June 1878.

University Hall, a four-story brick building, erected to house all academic work on the campus, did service also as a dormitory for a number of professors and students. In 1879 the present Service Building was constructed for the department of mechanical engineering. The year before, the school's name had been changed to "The Ohio State University."

The central feature of the 200 acre campus proper today is an oval around which are grouped various academic buildings. As a climax to the main axis of the oval, stands the Library, the finest structure on the campus. It is built of Bedford limestone which is pure white, in the Italian Renais-



School of Mines, O. S. U., in which are the Class Rooms, Laboratories, etc., of the Department of Ceramics.

sance style. The unusually large reference hall, 51 by 120 feet, equipped with rows of library tables and chairs, is the main interior feature and the present year finds the room filled to capacity at all hours by the students.

Stone steps and winding paths lead from the Library down to the beauty spot of the campus—The Hollow, a natural depression in which is located Mirror Lake, an artificial body of water that reflects its setting of forest trees.

When it is constructed, the Woman's Building for which ground was broken last spring, will overlook the lake. Oxley Hall, the girl's dormitory, a brick structure overgrown with ivy is near the campus beauty spot and across from it is the Home Economics Building.

Page Hall, a classic type of building; Orton Hall, a stone structure, with a set of chimes located in its tower; and the Armory, a feudal castle type, now used as a gymnasium, are among the buildings which surround the oval. Although it was used for years by the military department, Hayes Hall has been turned over to the department of Romance languages because of the unusual enrollment in that department. The English Building and the Biological Building—the latter of Venetian style—also border the oval.

For a number of years the ceramic engineering department was located in Orton Hall and then was moved to Lord Hall, an English Renaissance structure, made of brown shale brick and erected especially to accommodate mining engineering and ceramics. The last building completed on the campus is the Shops Building, a modern factory type, in which manual training is given, and The Lantern, the University daily, is put out by the students in Journalism under the department's supervision.

Townshend Hall, the agricultural structure, and the Horticulture and Forestry Building, located back of the Library on the east side of the Olentangy River, form the nucleus for a group of modern farm buildings. To make room for the prospective million-dollar athletic field and stadium for which a campaign is now on, all farm work will be transferred to the west side of the river in the future. The University farm comprises several hundred acres on both sides of the stream and practical lessons in farming are given by the College of Agriculture.

To accommodate an overflow of 900 freshmen out of an enrollment of 1,800 in chemistry, the east barracks, erected during the wartime sojourn of the aviators on the campus, has been transformed into a chemistry laboratory. This will be used until the new Chemistry Building is constructed, which means at least two years. The west barracks is occupied by the military department.

Besides the regularly prescribed military course, which requires two years of military drill, the department of military science and tactics offers training in field artillery. Credit toward graduation is given after satisfactory completion of the four years' course with the rank of second lieutenant in the Officers' Reserve Corps. The registration in the military department is 2,248, while 550 freshmen and sophomores have been exempted because of war service.

Ohio State, noted as a cosmopolitan school, has enrolled at present 68 foreigners, China having the largest number, with 20. Students are in the University from practically every state in the union, with Ohio, of course, in the lead, with 6,041. The College of Agriculture has an enrollment of 909 four-year students and 253 three-year students. Engineering claims 1,478 of those enrolled and Arts 2,318. First year students total 2,838, making the largest freshman class in the school's history. A teaching staff of 512 is maintained.

Through his connection with the Ohio Geological Survey and his work in gathering data covering the Ohio clays for a Survey Bulletin early in the 90's Prof. Edward Orton, Jr., saw what appeared to be a fertile field in a new branch of technology.

Much was to be learned about the numerous kinds of clays and shales, their properties, their peculiarities, their adaptability to the manufacture of the various clay wares when being manufactured throughout the state with practically no technical guidance.

By his study of the raw materials and his endeavors to learn their properties, with the idea of securing data which would enable him to improve the quality of wares, reduce manufacturing losses, etc., there came to Prof. Orton the vision of a school in which he could teach younger generations those things in which he was becoming so intensely interested.

After considerable meditation and after gaining the approval of the University authorities and a small amount of equipment the School of Ceramics, the first of its kind in the United States, finally sprang into existence in 1895, with Professor Orton as its head. It very modestly occupied a small portion of the basement of Orton Hall, at that time housing the Department of Geology, the University Library and the Geological and Archaeological Museums.

Employes at Ceramic Experiment Station, U. S. Bureau of Mines.

In the early years of the new school chemistry was considered very important, and was given considerable attention, this work being taught originally by Prof. William L. Evans, who is still a member of the teaching staff of the University in the Department of Chemistry. Professor Orton had the classes in raw materials, preparation of clays, manufacture of wares, glazing, etc., and burning, and in this connection he has in recent years laughingly admitted that in many cases the work was almost as new to him as it was to his students, and on many occasions he had hurried to the University early in the morning, so as to see the trials that had been burned in the one small kiln of which the school boasted and draw his conclusions upon the results before the students arrived for classes.

For several years Professor A. V. Bleininger, who is now Chief of the Ceramic Division of the U. S. Bureau of Standards, was Professor Orton's principal assistant. Later R. C. Purdy occupied the same position. W. G. Worcester, H. F. Staley,

F. K. Pence and Hewitt Wilson have occupied teaching positions in the department at various times as it has developed and expanded.

After getting a good start the development of ceramics has kept pace with other sciences. Instead of chemistry being the single pure science involved in ceramics both physics and physical chemistry are now recognized as having an equally important place. Furthermore, from a mere study of the sciences involved, the curriculum has been so expanded as to embrace such practical courses as will develop the student into a well trained engineer, and in order to keep pace with the development in instruction the once small school is now the "Department of Ceramic Engineering." The department is now in charge of Professor A. S. Watts. Carl B. Harrop is Assistant Professor, and James T. Robson is instructor.

About seventy students are enrolled for the present year in this department, which is somewhat below the pre-war

OHIO STATE UNIVERSITY BUILDINGS

UNIVERSITY HALL

POWER PLANT

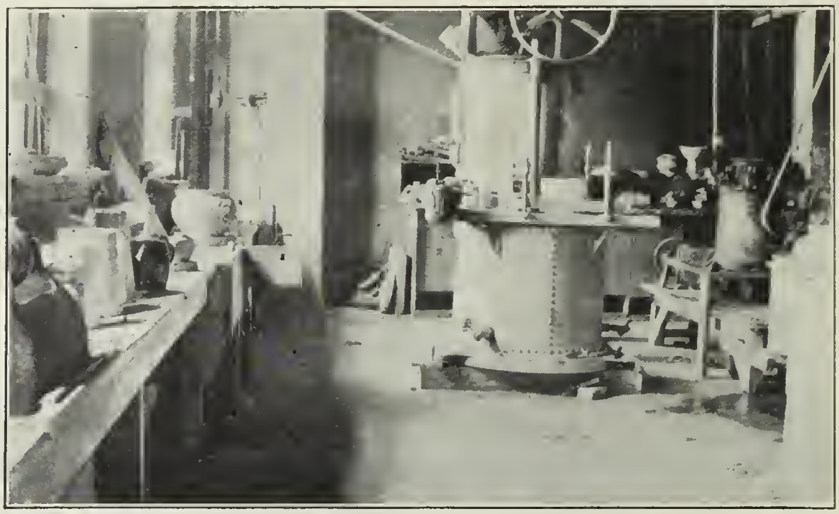
NEW ARMORY BUILDING

BIOLOGICAL BUILDING

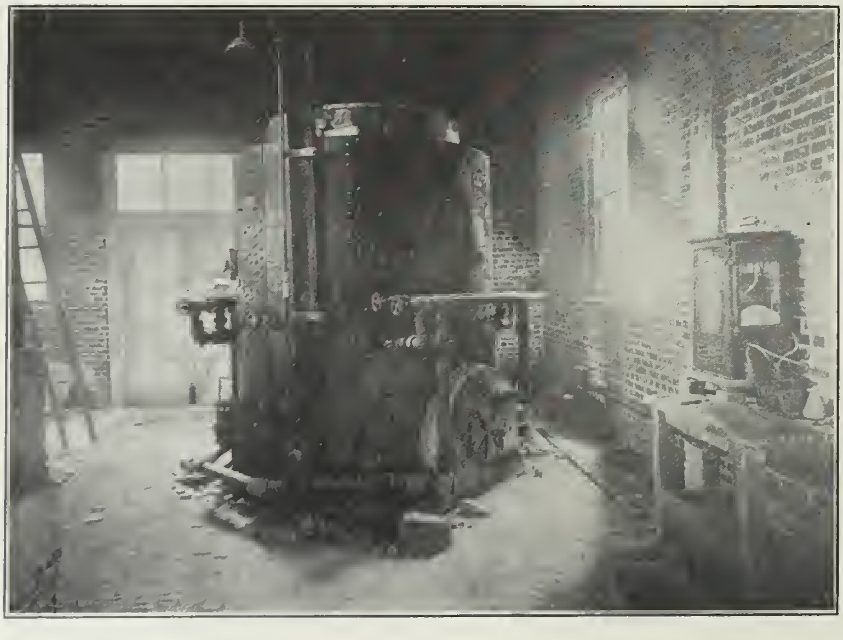
CHEMICAL HALL

HAYES HALL

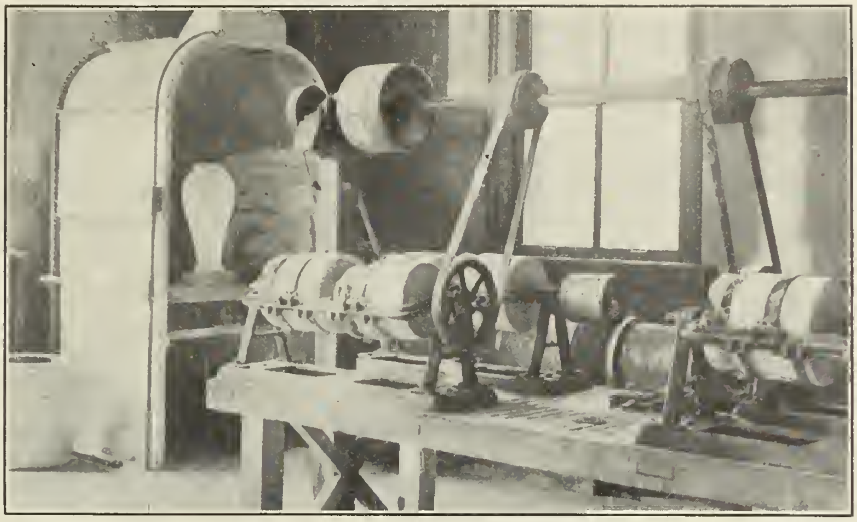
Corner in
New Office
Showing
Models of
Periodic Kilns



View in
Pottery
Work Room
Showing New
Clay Washing
Apparatus



Down Draft
Recuperative
Gas-Fired Kiln
At Ceramic
Experiment
Station
U. S. Bureau
of Mines



New Location
of Ball Mills
Showing
Spray Cabinet
in Background

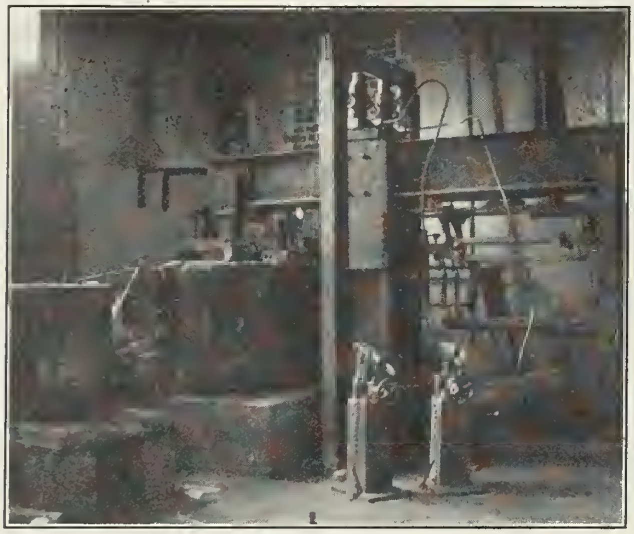
Recently Added
"High-Temperature,
Carbon Resistance"
Electric
Furnace

Section of
Optical
Laboratory
Ceramic
Experiment
Station

enrollment. A regular authorized Student Branch of the American Ceramic Society is maintained at the University, meetings being held twice each month, with interesting speakers in ceramics or allied lines.

In 1907 the department moved into its present quarters—Lord Hall—which was especially designed and erected for the use of the department. On the main floor are a large chemical laboratory for the analyzing of materials dealt with in ceramics, a ceramic laboratory for the study and preparation of glazes, enamels, etc., with ball mill room and a spraying cabinet connected, and a large lecture and assembly room. The mineralogy and metallurgy departments are also on this floor, and here the students study the minerals encountered as essentials or as impurities in ceramic operations—also a course in fuels and their utilization is given to all ceramic students.

In the basement are the ceramic preparation rooms, containing over one hundred bins of typical clays of all kinds, as well as feldspars, flints and other ceramic materials. In these preparation rooms are also small blungers, screens, agitators, presses, pumps, pug mills, etc., for preparing ceramic bodies and jiggers, turning wheels and presses for forming the ware. In a separate room are the crushers and laboratory dry pan, so that the dust can be kept from the other machinery. In an adjoining room is the carbon element electric furnace, where extremely high temperatures can be obtained for the testing of very refractory materials. On this floor are also the kiln rooms equipped with three rectangular brick kilns capable of being heated to cone 15, and two smaller kilns for low temperature work. In this kiln department are also small tangential gas-air furnaces for temperatures up to cone 26, and an elaborate high temperature load testing furnace and machinery whereby refractories can be tested as regards their resistance to high temperature under increasing load. The contraction or expansion of the specimen is also recorded by the same operation. All furnaces are connected with recording pyrometers located in an adjoining pyrometer room. Also on this floor are the full testing or calorimetry rooms and the laboratories for the study of the theory of heat measurement or pyrometry.



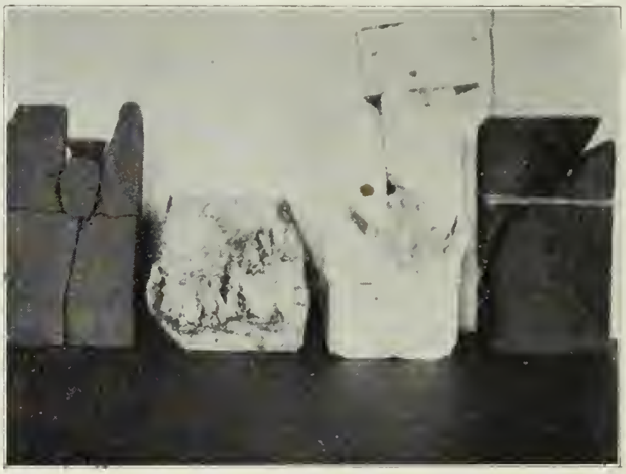
Testing Machine for Determining Hot Crushing Strength of Fire Brick at Ceramic Experiment Station.

On the top floor are the library, which is equipped with a full line of ceramic books and periodicals, the departmental museum and offices, the physical laboratories for the accurate measurement of the properties of clays and other ceramic materials, and the drafting rooms where the design and equipment of ceramic plants are taught, with special consideration for kiln and drier designs. On this floor is also the department of mine engineering, where instruction is given in the principles of mining ceramic materials with practical instruction in both surface and underground surveying.

Thus, under one roof are the instructional forces dealing with the identification of all the minerals encountered in ceramics, their proper mining and refining, their preparation for ceramic uses, the compounding of ceramic bodies of all types and their glazing or decoration, the forming of the different wares by the various recognized processes, the drying and burning, and the testing of ceramic wares and materials.

All this instruction is furnished by men who have had practical experience in the work that they are teaching, and thus the presentation of theory and fundamental principles is reinforced by a familiarity with working conditions which is of inestimable value to the student in acquiring a proper understanding of the subject.

In the courses in ceramic engineering, as taught, it is necessary and highly desirable to give a large amount of specific information which the student will find of incalculable value in after life, but the real aim and object of the course in ceramics, as planned and conducted, is to so equip the student with a knowledge of ceramic and other engineering principles that he shall be able successfully to attack any problem that he may encounter in the field of applied ceramic engineering.



Fire Brick which have been Subjected to Load Test at Furnace Temperature.

It is physically impossible for a student to gain detailed practical experience in every phase of ceramic engineering in the limited time that can be allotted to laboratory practice in the courses given. For this reason the laboratory practice is confined to such exercises as will give the student the maximum amount of experience in the minimum amount of time, and many valuable but minor branches of the ceramic industry are omitted when the principles and practice involved are similar to another branch which has more general application.

The Ceramic Experiment Station of the U. S. Bureau of Mines was established at the Ohio State University July 1, 1917. It was located at Columbus because, first, Ohio is the leading state in the value of ceramic products; second, Columbus is the approximate center of the ceramic industries, and, third, Ohio State University established the first course in ceramic engineering in America. It is well known both on account of its traditions and the quality of the men it has turned out.

The University entered into an agreement with the Bureau of Mines whereby the University agreed to furnish, free of charge, rooms for offices and laboratories, laboratory furniture and other fixtures, light, heat, power and janitor service and the use of equipment, consisting of kilns, machinery and apparatus.

The station's problems are those which have to do with the mining, refining and utilization of ceramic raw materials, the investigation of industrial problems with a view to reducing the cost of manufacture, and to improve the quality of products, the elimination of mineral and manufacturing waste, and to safeguard the health of workmen in hazardous ceramic occupations. In its work the station is authorized to cooperate with other Government bureaus and agencies, with state agencies such as state geological surveys, and with the ceramic industries.

The Experiment Station occupies fourteen rooms in Lord Hall. These rooms consist of the superintendent's office, chief clerk's office, ceramic engineer's office, combined library, drafting and conference room, physical laboratory, chemical laboratory, electric furnace laboratory, general work room, crude ware laboratory, crude clay grinding room, white ware laboratory, white clay grinding room, heavy machinery room, including a small brick making outfit, two tunnel dryers and a kiln room.

The personnel of the station consists of R. T. Stull, the superintendent, a chief clerk, stenographer, ceramic engineer, ceramic chemist, four ceramic assistants and an unskilled laborer, all employed on full time, and a microscopist, quarry technologist and potter, employed on part time.

Problems Under Investigation.

Ohio's most valuable clays are the high grade fire clays, and their investigation has been undertaken in cooperation with the Ohio State Geological Survey. The geological work and collection of samples have been completed by the survey, and the tests are to be made by the Experiment Station.

A thorough investigation is being made of 21 bond clays and 23 graphites for crucible making purposes. Laboratory tests have been made on different clay-graphite mixtures, and 475 large size crucibles have been made and tested under actual brass and steel foundry practice. About 400 more crucibles are to be made and tested before the work is completed.

Dolomite as a refractory for furnaces is an investigation which has been in progress for about a year. The additions of different substances to the crushed dolomite and the effect of different heat treatments upon the degree of dead burning are being studied. Also different binders used with dolomite for making brick are being investigated.

America has depended upon England for over 56 percent of the china clay used in the better grades of pottery, paper and oil cloth. Over 100 different white clays collected from different deposits east of the Mississippi river are under investigation. The physical properties of these clays are being investigated in comparison to those of a number of English clays. Clay refining methods are also being studied in order to improve the quality of the domestic white clays.

FACE BRICK.

The Face Brick Manufacturers' Association, through its campaign of educational advertising, is creating a taste for architectural beauty in the face appearance of walls, as well as developing bigger business in face brick. It is interesting and worth while to note in this connection that face brick properly is an outcome of common brick and some of the lessened production of common brick today is due to the convertion of common brick into fancy and face brick. It has indeed reached the point where a fourth of the value, if not a fourth of the production of brick, is today face brick, and some plants which formerly made only common brick and secured a little face brick incidently through selection, are now making face brick as their principal product and merely accumulate a little common brick incident to the manufacture of face brick. Face brick really represents an evolution out of common brick which promises to grow into a dominant item in the brick trade.

HOW MOTOR TRUCKS CAN LOWER H. C. L.

"OF EVERY DOLLAR paid by the average consumer for meat, milk, bread and potatoes, only 42 cents goes to the producer," says the Illinois Agricultural Association in reporting the findings of a recent investigation.

The cause of this increasing difference between the price to the farmer and cost to the consumer, according to R. E. Fulton, Vice President of the International Motor Company, manufacturers of Mack trucks, lies chiefly in the concentration of population in large cities and the resulting segregation of the farmer. Mr. Fulton suggests the improvement of highways, which will encourage the use of motor trucks and bring the farmer nearer to his market, as the only logical remedy.

"Years ago," he says, "when the farmer drove to town with his load of eggs, they cost less than ten cents a dozen and the consumer received them fresh from the farm. Now, the growth of cities has pushed him back many miles from the city markets with the result that he must ship them to the city by rail where they are put in cold storage and delivered to the consumer months later at a price that has already passed the eighty cent mark.

"Of course, monetary inflation has had a great deal to do with the increased price, but there is no reason why this difference between the price paid to the farmer and that paid by the consumer cannot be diminished by the improvement of highways and use of motor trucks to bring the farmer back to his old proximity to the market.

"There are 2,478,552 miles of public roads in the United States, yet, only 12 per cent of this total or 299,135 miles are improved with some form of surfacing. The roads are poorest where good roads are needed most. This is evidenced by the fact that Iowa, one of the states reputed to have the worst roads, has more trucks per capita than any other state in the Union. This, together with the fact that the farmer is the biggest user of motor trucks, proves that he is trying his best to reduce the high cost of living although he is severely handicapped by the lack of proper highway facilities.

"Legislation that discourages the farmer in his efforts, whether it be insufficient appropriations for highways or any discrimination against the motor truck is contrary to the best interests of the people for whom he is the source of livelihood."

A QUESTION FOR DISCUSSION.

One subject which comes up for attention at the N. M. B. A. annuals and receives discussion but not enough definite action is that of co-operation between brick layers and brick manufacturers. The need for better team work here is readily apparent, but the problem is how may we bring it about.

A good first aid to clean profits is to take a wholesome pride in the quality of your products. This leads to better prices, better profits, and better satisfaction to all.

Burning Clay Wares

by

Ellis Lovejoy

Written for The Clay-Worker.

THE CLAY-WORKER.

PART XLVI.

CAR TUNNEL KILN (CONTINUED)

THE car tunnel kiln tested by Prof. Harrop is 197 feet long, 4 feet 4 inches wide inside the tunnel, and 8 feet high from the rail to the under side of the crown in the center.

The output in fire bricks is about 30 tons per day burned to cone 8. A subsequent report by another authority shows temperatures of cone 13 to cone 14 which are the temperatures claimed for the kiln in question.

The coal consumption during the test by Prof. Harrop was 226 pounds of coal per ton of ware, the heat value of the coal being 13815 B.t.u. The other authority mentioned reported 250 pounds of coal per ton of ware burned to cone 14.

These results are not comparable with the results given for the compartment kiln by Prof. Hursh, nor would they be if the latter had distributed his results as did Prof. Harrop and given them in pounds of coal, simply because the wares are different and the temperatures attained are widely apart.

It is really immaterial what method of distributing the data is adopted, but there should be a standard method. We would prefer to have the results in pounds of fuel and placed where they belong, but since the fuel required to heat the ware is approximately the same for each cone temperature the percentage attributed to it becomes a comparative measure of the efficiency of the kiln. For instance, in Prof. Hursh's heat balance the kiln efficiency ranks high because 43.6 per cent. of the total fuel is attributed to the ware, while the kilns tested by Mr. Bleininger would rank low since only from 5 per cent. to 20 per cent. of the total fuel is attributed to the ware. In other words, the latter kilns, if the ware had been the same, would require from two to nine times as much fuel per ton of ware as the former.

The Dressler kiln is illustrated in Fig. 186, a diagramatic plan, Fig. 187, a cross section through the combustion zone, and Fig. 188, cross sections through the heating up and cooling zones.

The heating up zones varies in length from 50 feet to 120 feet and may be longer if desired. It is in this zone that dehydration and oxidation take place, and the successful accomplishment of these operations is an important factor in the wide application of the kiln. Pottery and sanitary wares are being burned successfully and economically in this kiln, and also fire clay products, but in these wares the oxidation difficulties are a minimum. Some of the common clay wares are exceedingly difficult to oxidize. The heat in the gases from the combustion zone is recovered by conduction, radiation, and convection in the heating up zone. These gases do not come in contact with the ware but instead are carried through the piping shown in the cross section of the heating up zone.

The volume of air in the heating up end of the tunnel is very small being that introduced by leakage, but any volume can readily be introduced and this, it is said, may be carried forward to any desired point and there drawn off and bypassed to the furnace bench.

This would provide the air essential to thorough oxidation.

The rate of oxidation is determined by the drop in temperature of the combustion gases. If the oxidation is too rapid, we might move the cars forward at a slower rate but this would involve holding the ware longer in the combustion zone which would not be desirable if for no other reason than the reduction in capacity without corresponding reduction in fuel consumption. The volume of gases and consequent heat supply cannot be changed because this depends upon the combustion requirement, but the drop in temperature requisite for any oxidation can be adjusted (in a longer tunnel) by the character, number, size, and shape of the waste gas flues and

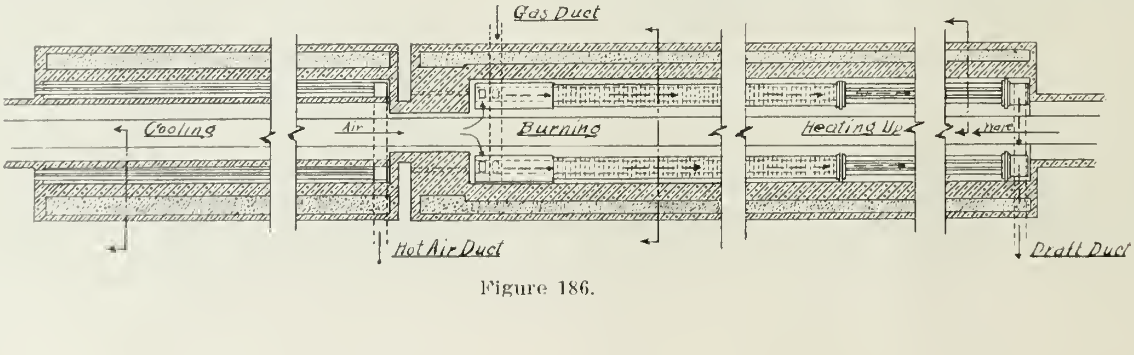


Figure 186.

piping. Longer stretches of fire clay ducts with thicker walls with a single large iron pipe extension to the draft outlet instead of the several pipes shown, will lengthen the heating up zone and result in a more gradual drop in temperature as may be required.

In the ordinary economizer kiln the combustion gases pass forward into the compartments of green ware, or at least into the compartments in which the ware is being heated up and oxidized and the ware is subjected to the ill effects of the combustion gases, particularly sulphur, including the sulphur from the ware which often exceeds that from the fuel. The bad effects of sulphur are especially severe where the kiln is not equipped with an advanced heating flue.

The operation of the Dressler car tunnel kiln differs materially.

The air for combustion enters at the delivery end and passes through the tunnel in contact with the cooling ware, up to the combustion zone. In this zone, on each side, is a combustion duct (furnace bench) built of fire bricks and lined with carborundum. The gas, if from a producer, is delivered to the kiln through a cross duct under the kiln base, and rises through vertical ports into the combustion ducts. The air is drawn into the combustion ducts through ports in the furnace bench and enters the ducts behind the gas although there is, or may be, air admission for secondary combustion in front of the gas port, or for a second gas port. In fact the relative positions of the air and gas entries may be anything the designer desires. The combustion ducts connect directly with the carborundum double walled combustion chambers shown in Fig. 187. The central ducts in these chambers carry the combustion gases while the surrounding transverse flues are for air circulation and heat convection in the heating up zone. Iron pipes extend the combustion ducts to the draft outlet.

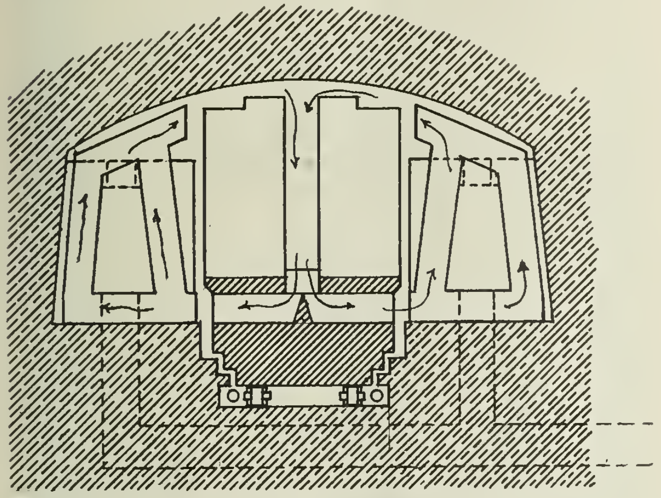


Figure 187.

It is seen that the air enters in the cooling end, is heated by the cooling ware, enters the combustion ducts near the longitudinal center of the kiln, and the combustion gases are drawn off through the heating up end by means of ducts and pipes. It is evident that no air except that from leakage enters the heating up end of the tunnel although air in greater quantity, if desired for oxidation, may be introduced through this end. Any gas or vapor from the ware in the heating up zone cannot pass back over the cold, possibly wet, entering ware, but instead must move forward to the combustion benches where it commingles with the hot air from the cooling end of the tunnel unless it be drawn off at some intermediate point.

In the heating up zone are the hot waste gas ducts and pipes and any air in the tunnel will tend to rise through the circulating channels and among the pipes into the tunnel crown space and then drop through the cooler ware. Since the air is replaced by leakage to some extent and in larger volume intermittently when the end doors are opened to introduce cars of green ware, there will be in conjunction with the transverse circulation, a forward movement, or in other words, theoretically there will be a slow spiral forward movement of the air through the heating up tunnel, which may be materially increased if desired.

The cooling zone has iron pipes on each side, open to the outside in the end wall, and connected with a fan at the end near the combustion zone. Through this air is drawn and heated for use in independent dryers or for other purposes in the factory.

A baffle wall is placed between the air pipes and the hot ware to develop the same circulating conditions as in the other end of the tunnel; namely, a transverse circulation of the air in conjunction with its forward movement in the tunnel, and the volume of air is that required for combustion, together with more or less excess.

It is of first importance, of course, to conserve the heat in the cooling ware for the kiln operation but any excess can be utilized for other work with the added advantage of getting the ware cooled which is not always the case where the cooling end of the tunnel is limited in length.

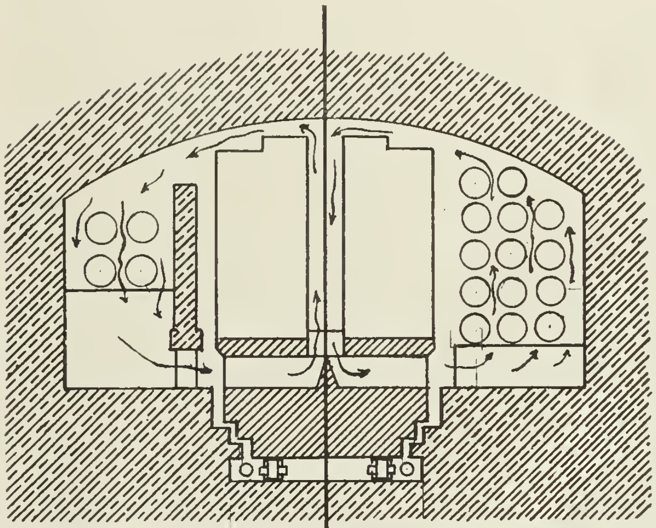


Figure 188.

When the kiln temperature to be attained is not excessive a larger volume of heat may be drawn off for other work even to the extent, if desired, that the heat so removed must be replaced in the kiln by the consumption of increased quantity of gas. It is simply a question of whether it is more economical to generate heat for outside purposes in the kiln or independently. In this instance the kiln has the preference most decidedly.

Where high temperatures are required in the kiln the first consideration must be conservation of heat from the cooling ware to augment the heat from combustion, and heat for outside work becomes secondary.

Dressler's idea in its completeness has three tunnels. One is the kiln proper. The second is a pre-heater and the heat is supplied by the hot air and by the products of combustion from the firing tunnel, the former introduced into the second tunnel direct and the latter drawn through wall pipes.

The temperature in the pre-heater is said to be 100 deg. C.

to 250 deg. C. The air from the pre-heating tunnel is drawn through side pipes in a third, or drying tunnel, and not only is the available sensible heat recovered but the vapor from the ware in the pre-heater which represents a large part of the heat, is condensed in the dryer tunnel pipes and its latent heat given up.

The data relative to the fuel consumption is varied but does not give us a fair comparison with that of other types of kilns.

We get the following data from a paper by A. Bigot in Vol. XV, Transactions English Ceramic Society.

Percentage of fuel value attributed to the ware in three types of kilns.

Dressler	49.6 per cent.
Hoffman	22.9 per cent.
Periodic	15.0 per cent.

The Hoffman kiln, it will be understood, is the ordinary tunnel, or ring kiln, and the periodic is presumably a down-draft. If the above data is correct then a unit of fuel will burn one ton of ware in the periodic kiln, a ton and one-half in the Hoffman, and more than three tons in the Dressler.

The data is interesting but not acceptable. We should know whether the ware was the same and also we should know the size and character of the periodic kiln. On the same yard we have found down-draft kilns using two and more times as much fuel per ton of ware than was being used in other kilns, simply due to the difference in size of the kiln.

Mr. C. J. Kirk, in Vol. XVIII, Transactions American Ceramic Society, states that 15,000 pounds of sanitary ware are being burned daily with 25,000 cu. ft. of natural gas whereas the same weight of ware formerly burned in periodic kilns required 250,000 to 30,000 cu. ft. of natural gas.

These figures are startling and cannot be accepted without some explanation of the gas firing in the periodic kilns. Natural gas is a very difficult fuel, economy considered, in a periodic kiln. The flame is short and very intense. It is necessary, to protect the furnace brick work and to get the heat over into the kiln, to introduce an excessive quantity of air through the furnaces to sweep the heat out of the furnace. The stack losses under such circumstances are excessive. It is possible to fire a kiln indefinitely without getting sufficient heat from the furnaces into the kiln through lack of excess that the gas combustion temperature is never high enough to burn the ware.

A pottery manufacturer puts the difference in gas consumption in the two types of kilns in a single sentence; namely, "Gas bills for periodic kiln operation were $3,000.00 per month, and now for Dressler kiln operation they are $1,000.00 per month."

This is a saving of 66 per cent. and it may be accepted as practical. Ordinary tunnel and compartment kilns show a saving of 50 per cent. to 75 per cent. over the periodic kiln, and the car tunnel kilns have the same regenerative principles as the ordinary continuous kilns and should show similar saving over the periodic kiln.

(To Be Continued)

Conditions Favor More Extensive Use of Hollow Tiles.

The clays of France and Belgium are well suited for the manufacture of brick and hollow tile (hollow building blocks), both of which are adaptable to French and Belgian construction methods. Conditions seem to favor the more extensive use of hollow tile, which can be substituted for either brick or stone to reduce the cost of material and to reduce the amount of labor and time required in construction. This can be accomplished without sacrifice of permanence or appearance. The time and the cost are now much more important considerations than they were before the war.

WHO'S WHO IN THE CERAMIC WORLD.

The Important Part Played by Col. Edward Orton, Jr., in the Upbuilding of the Ceramic Industry.

THE "MAN BEHIND THE GUN" in the preparations which have already assured one of the most pleasurable and remarkable conventions in the history of the National Brick Manufacturers' Association, to be held in Columbus, Ohio, February 16-20, 1920, is Colonel Edward Orton, Jr., sometime Professor of Ceramics at the Ohio State University, international authority on this subject, son of the first president of the Ohio State University and well-known geologist, the late Dr. Edward Orton.

Colonel Orton was not content to travel on his father's reputation, and early began to show distinguishing qualities.

Colonel Edward Orton, Jr., Columbus, Ohio.

At the age of twenty-one he was a mining engineer and surveyor in the Hocking Valley coal fields; a year later he was chemist and finally superintendent of blast furnaces. In the first furnace of which he had charge, he made the first "ferrosilicon," or high-silicon alloy of iron, produced in this country. This was at "Bessie" furnace, New Straitsville, Ohio, in 1887. Two years later, he entered the clay industries, and managed several different plants in Ohio and Kentucky. In 1893, he began an agitation for the establishment of a school to give instruction in the technology of the ceramic industries (clay, glass and cement) and in 1894 succeeded in securing the establishment of such a school, the first in this country. It was located in the Ohio State University, and Colonel Orton was the guiding spirit and director of it for twenty-two years.

In addition to his professorship in this school, Colonel Orton was Dean of the College of Engineering from 1902 to 1906 and again from 1910 to 1916. He succeeded his father as State Geologist of Ohio, from 1899 to 1906, getting out during his administration, nine bulletins and two large volumes, besides putting the survey upon an efficient business basis.

From 1899 to 1917, he was the secretary of the American Ceramic Society. He holds a fellowship in the American Association for the Advancement of Science; is a member of the Society for the Promotion of Engineering Education; of the American Society for Testing Materials; of the Society of Automobile Engineers; of the National Brick Manufacturers' Association, and of the Honor Scientific Society, Sigma Xi.

In spite of his administrative duties, Colonel Orton has found time to write. "The Clays of Ohio and the Industries Founded Upon Them (Vol. V, Geol. Sur. Ohio), "The Clayworking Industries of Ohio" (Vol. VII, Geol. Sur. Ohio) and scores of technical articles and brochures are over his signature, and the work he has inspired and directed would fill many volumes.

Colonel Orton got some military training in his college days and has remained a firm believer and powerful advocate of the value of such training for every boy, all his life. As dean, he supported the military department of his university in every possible way. His agitation was largely influential in shaping the legislation of the National Defense Act of 1916, in which for the first time a Reserve Officers' Training Corps, linked up with the educational system of the country, was created. At the age of fifty-three, he took the strenuous training of the Plattsburg camp, and was commissioned a major in the Officers' Reserve Corps on January 5, 1917. On the declaration of war on April 6, 1917, he was called out early in May and assigned to motor transport work. He was promoted to lieutenant-colonel in September, 1918, and was awarded the Distinguished Service Medal just prior to his discharge in June, 1919. He was subsequently made a full colonel in the Officers' Reserve Corps, which commission he still holds.

In addition to his military service, and the years spent at the university, Colonel Orton has shown his civic spirit in many other ways. He has been active in the affairs of the American Legion, and many other patriotic and philanthropic organizations, and in a quiet way has been a powerful factor in the civil life of the state capitol. In more recent years, despite the modest recompense which is the lot of educators, he has gone into manufacturing, and through his engineering and chemical knowledge has attained a position of significance in the business world, where his peculiarly agreeable personality has made him of constantly increasing importance.

His membership in the National Brick Manufacturers' Association is of twenty-six years duration, and he is naturally well known to its membership. But his naturally retiring manner is such that only a few of his intimates in that association know him as a man of parts in many fields of life.

Don't crowd your space, Mr. Advertiser. Better play up one selling point at a time than to try to get everything into one ad. and kill every possible chance for display. An ad. should stand out. It should be easily read. It should draw the attention of the reader. A carload of detail can't be crowded into a few inches of space and still retain the quality of sticking out as all good advertising should.—The Builders' Guide.

CLAY AS A FACTOR IN TIMBER CONSERVATION.

THERE was recently held at Indianapolis a tri-state forestry conference which included authorities and others interested in the subject of forestry from the three states of Indiana, Illinois and Ohio. The meeting itself was impressive of the fact that the conservation of timber has become one of the serious needs of the day, for without proper attention to such conservation the country will awaken a few years hence to find itself without sufficient timber resources to supply furniture factories and other wood working industries entering apart from the lumber supply needed for and used in structural operations.

No one listening to the discussion, and especially to the talk made by U. S. Forester Graves, could help but be impressed with the idea that burned clay can and should play an important part in the conservation of our forestry resources. There is raw material for brick and tile making widely distributed all over the country in practically inexhaustible quantities. And development of the use of this more extensively in building operations would not only save for other and more important uses much of our good lumber product, but it would at the same time result in better building, less danger from fire, and greater permanency.

Forester Graves said among other things that the building industries represent important consuming factors of lumber. In the central states we have long since passed the point where the local forests will supply even the building needs to say nothing of the mill work and furniture requirements and other wood working industries. In these same central states there has been considerable development in brick and tile making, and there should now follow an era of great development in the use of these products, especially in home construction and in farm improvements and home surroundings generally. The great quantities of lumber consumption have been in the modest homes of the cities and towns and in farm buildings. In the past this has been largely because of the cheapness of timber products and their comparative ease of working. Now that excuse no longer exists, especially that of cheapness. Lumber has reached a point in value where it costs practically the same in the first place to build with lumber as it would cost to build with brick, while in the long run the most permanent construction is cheaper as well as better, and safer against fire. Moreover, while lumber prices will likely fluctuate in the future, the timber scarcity has reached that point where it will continue on a high plane, making even the competitive opportunities better than heretofore.

Back of and more important than all questions of competitive material and costs is the important subject of conserving timber to supply the future needs of those wood working industries making furniture, mill work and a multitude of things for which there is no proper substitute for wood. These industries not only represent great capital investment, but they furnish employment to skilled labor as well as a product essential to the well-being and comfort of mankind, and their perpetuation is a matter of much more importance than any other factor having bearing in the case. Logically, their perpetuation calls for closer conservation and better utilization of timber, and curtailing of its uses in building construction where other material will serve the purpose better. For wall construction clay products furnish the best material the world has produced, and there is no danger of exhausting the supply of raw material. The use of it will result in better buildings and in contributing to the welfare of humanity generally as well as to the conservation of our timber supply for more important uses.

REFRACTORIES

THE USE OF FIRE CLAY IN LAYING FIRE CLAY BRICK.

By Raymond M. Howe.

IN THE MAKING of so-called fire brick mortars it is common practice to add certain materials to the ground fire clay. At times these other materials are added by the manufacturers of the mortar, while at other times they are added by the mason entrusted with the laying of the brick.

Such materials are generally added to make the mortar set firmly without the application of heat, or to offset the natural shrinkage of the clay, or to cause it to burn to a dense structure by reason of decreased refractoriness.

Ground silica and alumina are often added, and since the clay itself is composed almost entirely of these materials, this practice is perfectly legitimate—in fact, the general properties of plastic clay can often be improved by making such additions. On the other hand, it is evident that the addition of certain other materials is not justified, and this paper is designed to show the effect of such additions.

In the experiments here reported, a very plastic fire clay was selected and different amounts of water-glass, salt, Portland cement, carborundum, asbestos and lime were added. The analysis of the original fire clay follows:

Analysis of Plastic Fire Clay Used.

Ignition	11.12
Silica	56.42
Alumina	28.46
Ferric Oxide	3.12
Lime	.52
Magnesia	.44
Alkalies	.24
Fusion point, Cone 30	100.32

After the various mixtures were compounded, small samples of each were fused in the usual type of furnace used in making such determinations. The results of this work are given in Tables I, II, III, VI, V and VI and are shown graphically in Figure I.

TABLE I.

INFLUENCE OF THE ADDITION OF PORTLAND CEMENT TO FIRE CLAY.

Proportion.	Fusion Point in Cones.	Fusion Point in °C.
100% clay	Cone 30	1730 °C
96% clay ÷ 4% cement	Cone 27	1670 °C
94% clay ÷ 6% cement	Cone 20	1530 °C
90% clay ÷ 10% cement	Cone 15	1430 °C
92% clay ÷ 8% cement	Cone 19	1510 °C
80% clay ÷ 20% cement	Cone 13	1390 °C
70% clay ÷ 30% cement	Cone 11	1350 °C
60% clay ÷ 40% cement	Cone 8	1290 °C

TABLE II.

INFLUENCE OF THE ADDITION OF LIME TO FIRE CLAY.

Proportion.	Fusion Point in Cones.	Fusion Point in °C.
100% clay	Cone 30	1730 °C
96% clay ÷ 4% lime	Cone 20-26	1590 °C
92% clay ÷ 8% lime	Cone 17-18	1480 °C
88% clay ÷ 12% lime	Cone 11	1350 °C
84% clay ÷ 16% lime	Cone 10	1330 °C

TABLE III.

INFLUENCE OF THE ADDITION OF ASBESTOS TO FIRE CLAY.

Proportion.	Fusion Point in Cones.	Fusion Point in °C.
100% clay	Cone 30	1730 °C
97% clay ÷ 3% asbestos	Cone 28-29	1700 °C
94% clay ÷ 6% asbestos	Cone 19-20	1520 °C
91% clay ÷ 9% asbestos	Cone 18-19	1500 °C

TABLE IV.

INFLUENCE OF THE ADDITION OF WATER GLASS SOLUTION TO FIRE CLAY.

Proportion.	Fusion Point in Cones.	Fusion Point in °C.
100% clay	Cone 30	1730 °C
96% clay ÷ 4% water glass	Cone 29-30	1720 °C
92% clay ÷ 8% water glass	Cone 29	1710 °C
88% clay ÷ 12% water glass	Cone 28-29	1700 °C
84% clay ÷ 16% water glass	Cone 26-27	1660 °C
80% clay ÷ 20% water glass	Cone 26	1650 °C
76% clay ÷ 24% water glass	Cone 20	1530 °C

TABLE V.

INFLUENCE OF THE ADDITION OF SALT TO THE FIRE CLAY.

Proportion.	Fusion Point in Cones.	Fusion Point in °C.
100% clay	Cone 30	1730 °C
95% clay ÷ 5% salt	Cone 26	1650 °C
90% clay ÷ 10% salt	Cone 14	1410 °C
85% clay ÷ 15% salt	Cone 5	1230 °C

TABLE VI.

INFLUENCE OF THE ADDITION OF CARBORUNDUM TO FIRE CLAY.

Proportion.	Fusion Point in Cones.	Fusion Point in °C.
100% Clay	Cone 30	1730 °C
95% ÷ 5% Carborundum	Cone 29	1710 °C
90% ÷ 10% Carborundum	Cone 29	1710 °C
85% ÷ 15% Carborundum	Cone 29	1710 °C
80% ÷ 20% Carborundum	Cone 29	1710 °C
70% ÷ 30% Carborundum	Cone 29	1710 °C
60% ÷ 40% Carborundum	Cone 29	1710 °C
50% ÷ 50% Carborundum	Cone 29	1710 °C

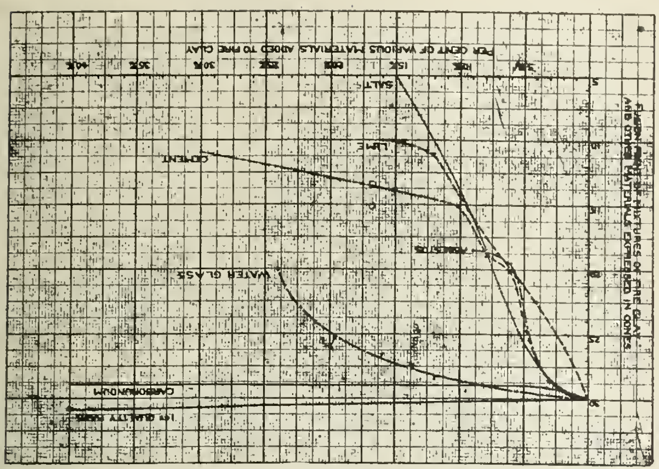


Figure 1.

A careful examination of these data shows very clearly how seriously the addition of lime, Portland cement, asbestos and salt affect the quality of fire clay, the addition of only 5 per cent. of these materials lowering the fusion point about 200° Fahr. Water glass and carborundum did not exert so marked an influence.

The combined effect of the addition of asbestos and waterglass to fire clay may be appreciated more fully if a mortar of the following composition (Mortar No. 1) be studied. The chemical analysis indicates that about 10 per cent. of each of these materials was added to fire clay or silica cement in making the mortar.

Analysis of Mortar No. 1.

Ignition	8.94
Silica	72.96
Alumina	7.64
Ferric Oxide	1.11
Lime	.34
Magnesia	3.01
Alkalies	6.76
Fusion point, below Cone 11	100.81

Piers were built in which this mortar was used in making the joints and after being dried they were placed under a pressure of eleven pounds per square inch and heated.

Plate No. 1 depicts the effect of such treatment, the column marked "1" showing a pier before being heated. The column marked "3" shows the effect of heating to 1100° C. (2012° F.) and the column marked "5" the condition of a pier being heated to 1250° C. (2282° F.).

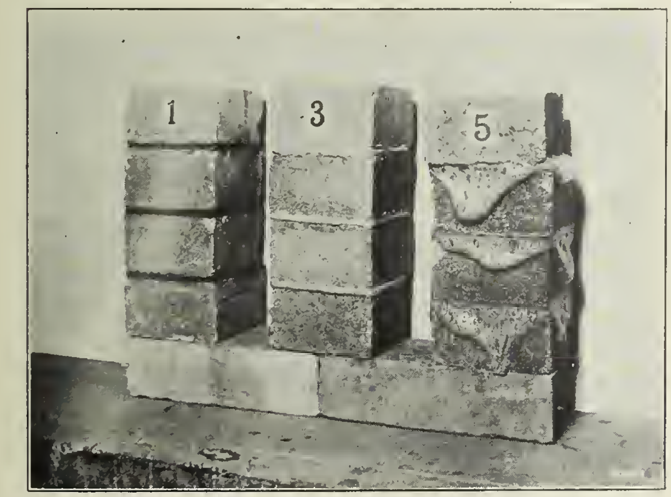


Plate I.

Arches were then constructed, using the same mortar in the joints. Plate No. 2 shows a typical arch before being treated, while Plate No. 3 shows a similar arch after it had been heated to 1250° C. (2282° F.).

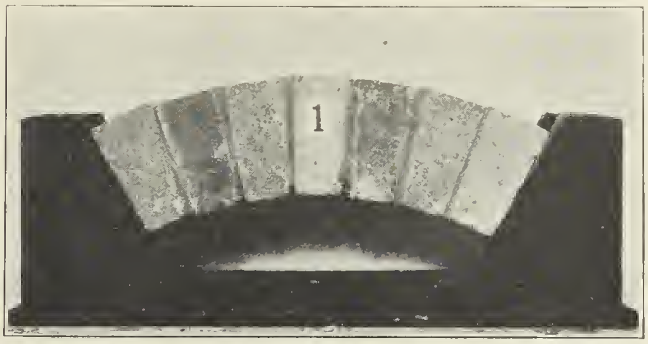


Plate II.

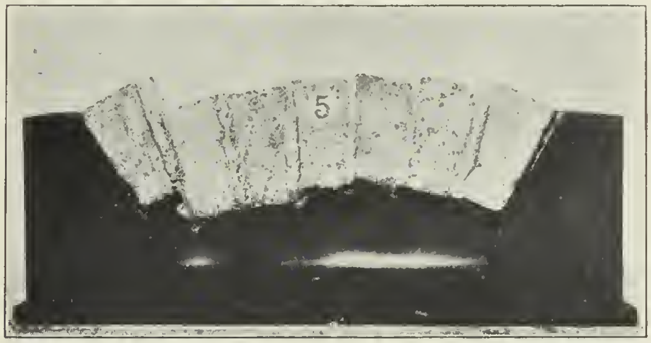


Plate III.

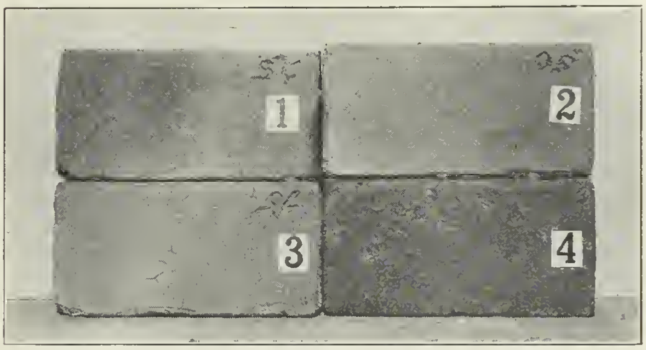


Plate IV.

These tests convinced the writer that although the addition of these materials improved the working and setting properties of mortar, mortars so made should not be used at high temperatures. If they are used, the foreign ingredients should be used in very small amounts. However, it must be a fact that fire clay, when used alone, does not give a satisfactory joint for some purposes—otherwise no attempt would be made to improve it.

Much of the dissatisfaction which has attended the use of fire clay to which no foreign material had been added can be traced to the shrinkage of the fire clay during the application of heat, for if this tendency to shrink could be overcome, the joints would be firmer, tighter and would not fall out of the arches.

A more logical way to prevent this shrinkage and so establish a firmer joint is not to add foreign materials to the fire clay, but to use the same material, taking the precaution, however, to add a certain amount of clay which had previously been shrunk.

To demonstrate this, some bats of first quality brick were finely ground and mixed with the same fire clay as was used in the other experiments. The effect of this addition upon the fusion point of the clay is shown in Table VII and is decidedly favorable.

TABLE VII.

INFLUENCE OF THE ADDITION OF GROUND FIRST QUALITY BATS TO FIRE CLAY.

Proportion.	Fusion Point in Cones.	Fusion Point in °C.
100% Clay	Cone 30	1730 °C
75% clay ÷ 25% bats	Cone 30-31	1740 °C
50% clay ÷ 50% bats	Cone 31	1750 °C
25% clay ÷ 50% bats	Cone 31-32	1760 °C

The effect upon the shrinkage is shown in Plate No. 4, where mixtures "1" is 25 per cent. plastic clay and 75 per cent. ground bats, mixture "2" equal quantities plastic clay and ground bats, "3", 75 per cent. plastic clay and 25 per cent. ground bats and "4" all plastic clay. It can be seen that "2", containing half plastic clay and half ground bats, is far superior to "4", which is plastic clay alone.

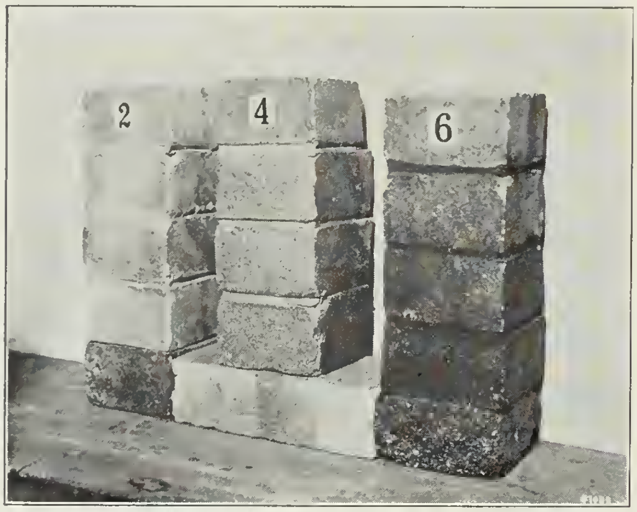


Plate V.

Laboratory tests also show that the joints made from the mixture of half ground bats and half plastic clay were stronger than those made from plastic clay alone.

Before passing final judgment upon the merits of such a mixture, however, it was decided to subject it to the same tests as were applied to Mortar No. 1, and Plate No. 5 shows the results of the column tests, "2" not having been heated. "4" having been heated to 1250° C. (2282° F.) and "6" to 1350° C. (2462° F.).

The results of the arch tests are shown in Plate No. 6 this arch having been heated to 1350° C. (2462° F.). It will be noted that these joints are firm and strong and that they have not begun to soften. As a matter of fact, such joins are stronger when heated to higher temperatures than when heated to the temperature just mentioned.

In conclusion, the writer wishes to emphasize the harmful results which may follow the addition of certain foreign materials to ground fire clay and the good results which may be obtained by the addition of ground bats. In either case, the joints should be made as thin as possible, not only to lesson the chances of harmful results arising from the difference in the structure of the joint as compared with the structure of the brick, but to increase the relative proportion of brick to joint: for at no time can the joint be expected to exert a greater resistance to the action of destroying influences than can the brick itself, particularly if the brick has been selected with a view to resisting conditions such as the finished work will meet.

(Note—A paper read before a meeting of the Refractories Manufacturers' Association, in Chicago, Ill., January 14, 1920. Published by permission of the director of the Mellon Institute of Industrial Research.)

THE YEAR IN BUILDING.

It is a bit difficult to get a clearly definite estimate of the past years record in building operations. Moreover comparisons with other years do not shed much light, partly because of present high values, and partly because during the war period building was at a low ebb. However, the year as a whole has done fairly well, as well as could be expected, and has used up practically all available building material.

F. W. Dodge and Company estimates the total of contracts awarded January 1 to December 1, 1919, at $2,332,902,000. This is easily the largest aggregate of figures ever shown, but a part of its bigness is accounted for by increased values. The volume of building perhaps will compare well with 1915 and 1916, though the value is nearly double. This would indicate practically a normal year in building, with no progress toward wiping out the deficit in building operations resulting from the inactivity of the war period.

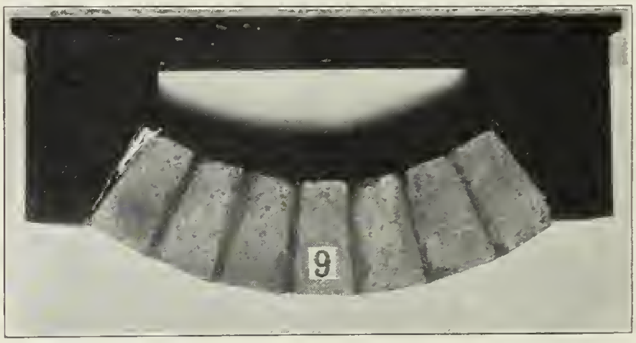


Plate VI.

There is another angle of the situation too, that is, the limited quantity of home building indicated in the years work. Usually home building represents in the aggregate the major part of our building operations. So far it seems from reports that this was not the case. During the past year factories, ware houses, and other commercial and public buildings seem to have made up more than the usual proportion of the years work. The building of homes, apartments and hotels, that is, housings for humanity, has lagged behind somewhat and the need at the present time for more of these is very urgent.

If home building gets under way as it should the present year should see building operations which will aggregate nearly four billion than two billion, and somewhere between one-half and three-fourths of this should be homes and structures for human habitations. In a word, while the past year has done very well the present year is the one of the biggest prospects ever known to building operations. Are you ready to meet the occasion? Are you prepared to serve the needs for building in your community? If not, it is time to get busy.

KENTUCKY BRICKMAKERS MEET.

THE KENTUCKY Clay Products Association held its annual convention at the Louisville Old Inn, Louisville, Ky., January 21st, and though the crowd was rather small the interest was keen and the reports indicate satisfaction in the situation and more interest in association work all around. Most of the members attending not only joined the Common Brick Association at the solicitation of Secretary Ralph P. Stoddard, but they also promised to attend the National Brick Manufacturers' Association at Columbus on invitation of Secretary Randall of the National Brick Manufacturers' Association, who was present by invitation.

Minutes of the Meeting.

The meeting was called to order in the parlor of the Louisville Old Inn at 12 o'clock by President Cramer, after which the secretary read the minutes of the previous annual meeting and the treasurer's report showing a healthy balance on hand.

The members present were asked for an expression on business conditions and this brought out the fact that help is scarce and high in price and one of the problems before the trade is that of providing housing for help.

Clark Brothers, of Owensboro, reported that they intended to build a number of houses which they would sell to their men on the installment plan to encourage home owning as well as to provide housing means.

H. C. Kleymeyer, of Evansville, Ind., reported that they were thinking of putting into effect a bonus system to encourage their help making a bonus $1 a week extra, provided a full week was put in.

All the members attending reported good business prospects and the main problem before them that of producing enough to supply the needs.

After an exchange of price reports, the meeting adjourned to a private dining room, where J. T. Howington, of the Louisville committee, had arranged for lunch.

After lunch the meeting was again called to order and President Cramer introduced Ralph P. Stoddard, of the Common Brick Manufacturers' Association of America, who, after explaining the work outlined by this association for advertising brick, made a successful plea for membership and signed up every brick manufacturer present for co-operation in this good work.

Following this T. A. Randall, publisher of the Clay-Worker and secretary of the National Brick Manufacturers' Association, was introduced. Mr. Randall took an optimistic view of the outlook and prophesied ten years of good business ahead of the clayworking industry. Also he indorsed the work of the Common Brick Association and made an appeal for attendance at the National Brick Manufacturers' Association, to be held at Columbus February 16 to 20, because he expects this to be the biggest convention of clayworkers ever held.

The meeting then proceeded to the election of officers with the following result: Officers elected, J. T. Howington, president, Louisville; F. C. Klutey, vice-president, Henderson; A. F. Kleymeyer, treasurer, West Point; J. Crow Taylor, secretary, Louisville. Directors, term expires 1921: F. C. Klutey, Henderson; M. J. Bannon, Louisville; H. C. Cramer, Lexington. Term expires 1922: L. Ruby, Providence; A. H. Schneider, Nicholasville; T. Bishop, Louisville. Term expires 1923: J. H. Clark, Owensboro, Route 3; H. C. Kleymeyer, Evansville, Ind.; George D. Dalton, Hopkinsville.

The attendance: H. C. Cramer, Lexington; J. T. Howington, Louisville; A. Hillenbrand, Louisville; R. L. Clark, J. H. Clark, Owensboro, R. F. D. 3; T. Bishop, Louisville; F. C. Klutey, Henderson; H. C. Kleymeyer, Evansville, Ind.; C. F. Herman, Tell City, Ind.; A. T. Kleymeyer, West Point; T. A. Randall, Indianapolis; Ralph P. Stoddard, Chicago; J. Crow Taylor, Louisville; A. H. Schneider, Nicholasville; W. B. Whaley, Louisville.

Notes of the Meeting.

The feature of the Kentucky gathering was the keen interest in two subjects, that of homes and of adding labor saving machinery.

R. L. and J. H. Clark, operating about ten miles out from Owensboro as the Clark Manufacturing Company, have a plan in hand to build a series of homes for their men and sell them to them on the installment plan. The men in their territory alternate their work between the brickyard and the coal mines, working in the mines in the winter when the brickyards are closed and in the brickyards during the summer. By encouraging home owning they hope to build up a permanent community of better satisfied citizens.

C. F. Herman, of the U. S. Brick and Tile Company, Tell City, Ind., who was among those present and is interested in the Kentucky trade, is putting in an electric truck system to replace most of their wheelbarrow work.

H. C. Cramer, of the Lexington Brick Manufacturing Company, in addition to installing an automatic soft mud brick machine, is also putting in a trucking system to eliminate most of his wheelbarrow work, using gasoline tractors and trailers.

H. C. Kleymeyer, Evansville, is putting in a soft mud automatic machine. Also he is interested in the housing proposition in a broad way in Evansville and they are developing a plan to assist in financing home building so as to make it easier for the workman to build a home of his own and pay it off in installments instead of paying rent. Their plan as so far developed centers on the idea of guaranteeing the difference between the amount ordinarily loaned and the amount which will be necessary in addition to this to enable the builder to finance his undertaking.

F. C. Klutey, of Henderson, says they have been closed down since the coal strike and while they have about 600,000 brick on hand these are mostly sold and the indications are that the local trade will require more brick than they will be able to produce. They expect to start up in April.

A. H. Schneider, Nicholasville, says that he has a few brick on hand yet but not many and the needs of his community will readily require more than he will be able to produce. He has been getting $20 to $22.50 a thousand for brick, and says while that is high everything else is high in proportion so the people really have no kick coming.

THE WELCOME MAN.

The failures of life sit around and complain,
The gods haven't treated them white;
They've lost their umbrella whenever it rains,
And they haven't their lanterns at night;
Men tire of failures who fill with their sighs
The air of their own neighborhoods;
There's a man who is greeted with love-lighted eye—he's
The Man Who Delivers the Goods.

One fellow is lazy and watches the clock,
And waits for the whistle to blow;
One has a hammer with which he will knock,
And one tells a story of woe;
And one if requested to travel a mile,
Will measure the perches and rods;
But one does his stunt with a whistle and smile—he's
The Man Who Delivers the Goods.

Connecting Links.

TWENTIETH ANNUAL CONVENTION OF THE WISCONSIN CLAY MANUFACTURERS' ASSOCIATION, REPUBLICAN HOUSE MILWAUKEE, WIS. JAN. 27 and 28.

REPRESENTATIVE manufacturers of clay products of Wisconsin gathered at the Republican House, Milwaukee, Wis., on January 27 and 28, to attend the sessions of the twentieth annual convention of the Wisconsin Clay Manufacturers' Association. The 1920 convention was one of the most important ever held by Badger manufacturers inasmuch as some very important and vital problems which confront the clay products producers of this state have developed during the past year as the result of conditions which have been brought about by the ending of the great world war. The labor shortage, high wages, excessive railroad rates, increased fuel costs and shortage and the transportation problem were among the most important problems which furnished subjects for discussion.

The attendance this year was not quite up to the usual number which can be accounted for in a measure by the necessity of a late change in dates for the convention. Instead of the February dates it was found necessary to hold the convention in January because of the fact that Secretary Samuel Weidman, of Madison, was obliged to go south February 1st. Mr. Weidman was associated with the State Geological Survey of Wisconsin at Madison, but will assume a chair at the University of Oklahoma as instructor of ceramic studies. Many of the members of the association found it impossible to arrange their business affairs in order to attend the convention in Milwaukee in January, especially as the National Brick Manufacturers' Association will hold its annual convention the third week in February at Columbus.

The convention opened Tuesday morning, January 27, with the registration of members and a general get-together meeting. The program proper was started at the afternoon session on the same day. President John Ringle, of Wausau, after calling the convention to order, made the president's annual address. In the course of his talk, which, like addresses that followed, was impromptu, President Ringle gave a resume of the activities of the Wisconsin association during the past year and brought out some of the problems that will have to be met by the clay products manufacturers during the coming year.

During the past year the association has been on the alert for legislation which would be a disadvantage to manufacturers, the most important being the revision of freight rates. As the railroads will undoubtedly be returned to private ownership after March 1st, the association felt that no particular action could be taken at this time. The sentiment, however, is to secure more fair and equitable rates, especially as they apply to short hauls, so that the manufacturers in this state will secure more advantageous rates than those of their competitors from other states who are enabled to secure long hauls at practically the same rates as for short hauls.

The labor problem resolves itself about two facts, a general labor shortage and the high price demanded by workmen. To keep up production it is necessary to secure labor at current wages, but Mr. Ringle warned the members not to forget the cost of production in figuring the selling price of their product. He urged them to get good labor and produce quality material, as the demand was there and the consumer is willing to pay prices that compare favorably with the goods produced. The problem of fuel shortage brought out the possibility of changing from wood, coal and oil, to the fuel which was most easily and cheapest to secure in the various communities at which the plants are located.

The reports of Secretary Weidman and Treasurer Erwin Fricke showed the association to be in good condition. The association voiced its approval of the untiring efforts of Secretary Weidman and the good work of Treasurer Fricke, later showing their appreciation to them as well as President Ringle by unanimous re-election to their respective offices.

The question of "Can the Brick Manufacturer and the Brick Layer Co-operate?" was taken up by Charles J. Ebert, representing the Milwaukee local union of bricklayers, and A. W. Hilker, for the State Manufacturers' Association, followed by a general discussion. The subject proved a most interesting one and has resulted in a new movement to secure greater co-operation and working together of the manufacturer and user of clay products in the state of Wisconsin.

One of the questions considered was that of making all brick uniform in size and another a plan to boost brick as building material. In this discussion the shortage of new blood in the bricklaying field was brought out. According to present union rulings a contractor is allowed only one apprentice on a job and it was held that if this rule was dispensed with so as to allow a greater number of apprentices, the present shortage of bricklayers would soon be eliminated. It was also urged to secure greater co-operation among the vocational and industrial educational institutions of Wisconsin to create more interest among the youths of the state in the training for bricklaying trades. To increase the use of brick as a building material was agreed to be of advantage both to the manufacturer and the bricklayer as it affords both an opportunity for expansion. The advantages and disadvantages of manufacturing and using brick of uniform size were discussed, but nothing definite was decided upon as to a plan of action.

Oscar Zimbal, of Sheboygan, gave an instructive talk on "Uses of Waste Heat in Drying," in which he brought out the economy of equipping plant so as to enable the manufacturer to utilize the waste steam from the power plant during the day and switching to a heating plant for drying during the time that the power plant was not in operation. Various members also explained how they have equipped their plants so as to use waste heat for the purpose of drying.

An invitation was extended to the Wisconsin manufacturers to attend the convention of the Common Brick Manufacturers' Association which will meet jointly with the National Brick Manufacturers' Association at its thirty-fourth annual convention of the National Brick Manufacturers' As- R. P. Stoddard, secretary of the Common Brick Manufacturers' Association, attended the Wisconsin convention in person and aroused keen interest among the manufacturers in the coming national convention of the National Brick Manufacturers' Association, the Common Brick Manufacturers' Association and other affiliated organizations.

Mr. Stoddard addressed the Wisconsin meeting on "The Value of Advertising."

"The price of common building bricks," he said, "one of the earliest inventions that heralded the dawn of civilization, is the surest and most accurate indication of the price of labor today. Bricks come directly from the ground. The price finally paid by the customer for his bricks represents almost entirely the price of labor put into them.

"Moreover, bricks are produced locally. Except in the case of fancy or facing bricks, they are seldom shipped any great distances. So that precludes the possibility of one locality controlling the entire output. It is this fact that has kept the brick industry so highly competitive. Lumber and other building materials are shipped from a distance, but bricks are made, so to speak, on the spot.

"When you buy a load of bricks, it is human labor that you are paying for, not an expensive raw material. For this reason bricks are going to be used more and more as the price of lumber and other raw materials increases."

The plan to boost brick as building material by a general advertising campaign was discussed. An increasing demand for bricks due to the building boom that is sweeping the country is looked for. The state association, however, took no definite action for an advertising campaign of its own inasmuch as the national association has developed plans along this line and it was decided to co-operate with the national movement rather than start an individual state movement.

The program for the first day was concluded by the annual dinner, followed by a round table discussion.

On Wednesday morning the association took up the subject of "Local Methods of Brick and Tile Manufacture," going into the phases of mining and hauling the clay; preparing the clay; systems of drying; kind of kiln used in burning; kind and cost of fuel; labor system and cost; grading and price of product; system of bookkeeping and accounting. The brick manufacturers were represented by the following: Oscar Zimbal, Sheboygan; Erwin Fricke, Manitowoc; N. H. Meier, LaCrosse; L. H. Cordes, Watertown; L. D. Pratt, Menomonie; Excelsior Brick Company, Menomonie; Northwestern Lumber Company, Stanley; Cook & Brown Lime Company, Oshkosh; F. E. Poels, Green Bay; Ringle Brick Company, Wausau, and Edward Langenberg, Stevens Point. The tile situation by Gunther Bros. Brick and Tile Company., Port Washington; Burlington Brick and Tile Company, Burlington; Falls Brick and Tile Company, Sheboygan Falls; Whitewater Brick and Tile Company, Whitewater, and the Vesper Brick and Tile Company, Vesper.

The methods of the various plants were discussed and many valuable ideas developed. The use of oil burners in preference to wood and coal was strongly urged, especially because of the shortage and high cost of wood which is hardly available for this purpose, and the scarcity and excessive price of coal. Those who use oil as a fuel made claims of producing better brick as well as having solved a labor problem as the firing can easily be done by one man and would not be interrupted by the absence of laborers during the process of burning. The oil burner system, it was claimed, has been tried and approved by the largest manufacturers with great success and that it was as practical for the smaller producer who would soon save the cost of transforming from wood or coal burner to oil in labor saving.

The labor problem was discussed from various angles and it was shown that different problems confront manufacturers in various localities. The clay manufacturer of the industrial cities must compete with other industries for his labor and consequently must pay higher wages than in many other sections. One difficulty was noted in the fact that the clay manufacturer can offer work only part of the year and that many men he secures are those who are not fit for skilled labor in other industries. In the agricultural sections labor is not so difficult to obtain nor is it as high priced, although now farmers are paying their help better wages and thereby enter into the competition for help. Wisconsin manufacturers have not tried out female labor, but reports from other sections discourage the idea as not having worked out practicably.

Various angles of grading and price problems came up at the meeting. Although better class labor costs more it was urged to get the best help and produce a satisfactory product. The consumer today wants only the best and is willing to pay a fair price, while anything below A-1 quality was difficult to dispose of at any price. Members discussed the various methods of fixing discounts to jobbers, contractors and consumers. The discussion was pro and con on which of these were entitled to discounts and to what extent. The method of selling f. o. b. on cars at point of loading at one price per thousand in any quantity met with favor. Having established dealers sell the product to the contractor or consumer at the same price which the dealer will charge was another idea advanced. This method, it was held, has a tendency to throw the business to the dealer so that the manufacturer does not have to bother with retailing.

The importance of proper bookkeeping and accounting methods was forcibly brought out at the convention. It was held that the tendency in the past has been to pay too much

John Ringle, Wausau,
President

Oscar Zimbal, Sheboygan,
Treasurer

Samuel Weidman, Madison,
Secretary

attention to competitive prices rather than to ask a price that is in keeping with the cost of production to which must be added a reasonable profit on the capital invested. Anton Stiel, the grand old man of the Wisconsin association and still active in the Jefferson Brick and Tile Company, at Jefferson, Wis., gave the members some expert advice on this subject. The fact that the demand now exists for practically all the brick that can be produced was held to be an opportunity for the manufacturers to consider facts as they are and not to try to make themselves believe that if one manufacturer quotes a price that the second one can do business just as cheaply or more so than the first, with the result that he takes business at an actual loss.

Freight Rates.

Because of the uncertain state of railroad operation at this time the association did not decide upon a definite course to pursue in seeking relief from the present unfair railroad rates. The possibility of even higher rates was brought out but it was held that no action could be taken until the lines have passed from public to private control, as is planned March 1. If present plans materialize and the roads are turned back to the owners, the Railroad Commission of Wisconsin will undoubtedly again control the rates for this state.

The former rates under the commission were made August 15, 1911, and were held to be entirely fair to the manufacturers. Under government control rates have increased greatly on all classes of brick, while the members hold that there should be a distinction in rates of common, pressed and fire brick, because of their correspondingly higher costs or value.

Another thing held detrimental was that the present rates are based on the quantity of the shipment rather than on the distance of the haul. The short hauls of Wisconsin manufacturers thereby cost just about as much as the long hauls of outsiders and the fact that local manufacturers are nearby does not afford them any advantage. It was suggested that districts be established for certain rates so that the manufacturers may get the advantage of short hauls.

The matter was referred to the standing committee on railway rates with instructions to call upon the association in case of further developments which would be a detriment to Wisconsin manufacturers.

Election of Officers.

The nomination and election committee reported the following recommendations which were unanimously approved: That the officers for the ensuing year be declared elected as follows: President, John Ringle, Wausau; vice-president, Oscar Zimbal, Sheboygan; secretary, Samuel Weidman, Madison; treasurer, Erwin Fricke, Manitowoc.

The following standing committees were appointed: Railway rates: John Ringle, Wausau; Oscar Zimbal, Sheboygan, and Charles L. Burnham, Milwaukee. Publicity and legislation: Samuel Weidman, Madison; A. W. Hilker, Racine, and Edwin W. Langenberg, Stevens Point.

Upon motion of Mr. Hilker, a rising vote of thanks was extended to the officers for their untiring efforts and splendid services during the past year.

Report of Committee on Resolutions.

The report of the committee on resolutions presented the following resolutions, which were unanimously adopted:

WHEREAS, the present railroad rates as applied to products of clay manufacturers in the state of Wisconsin are unfair and unequitable as compared with the rates on other commodities, therefore, be it

RESOLVED, That the committee on railroad rates is hereby authorized and directed to take such action in behalf of the members of this association as may be deemed necessary to procure such rates on shipments of clay products in Wisconsin as will be fair and equitable as compared with the rates on other commodities and in accordance with the principles upon which is based the decision of the Railroad Commission of Wisconsin of August 15, 1911.

WHEREAS, there is an acute shortage of bricklayers in Wisconsin at present and this shortage is detrimental to the use of brick building materials and the welfare of the general public, therefore, be it

RESOLVED, That the Wisconsin Clay Manufacturers' Association urges the more general training and education of boys in this state in the brick laying trade in vocational and industrial schools of Wisconsin. And be it further

RESOLVED, That this association urges the elimination of the restrictions relative to the number of bricklayers' apprentices allowed contractors by the bricklayers' union of the state of Wisconsin.

The official roster of the association showed the following list of those who attended the convention:

John Ringle, of the Ringle Brick Company, Wausau, Wis.; Samuel Gunther, of Gunther Bros. Brick and Tile Company, Port Washington, Wis.; Samuel Weidman, state secretary, Madison, Wis.; Erwin Fricke, of William Fricke Sons Company, Manitowoc, Wis.; A. W. Hilker, Racine, Wis.; Oscar Zimbal, of the Zimbal Brick Company, Sheboygan, Wis.; Rudolph F. Schober, of the Monroe Steam Brick Works, Monroe. Wis.; Charles C. Stadler, of the C. C. Stadler Company, Two Rivers, Wis.; Anton Stiel, of the Jefferson Brick and Tile Company, Jefferson, Wis.; A. O. Wachter, of the Falls Brick and Tile Company, Sheboygan Falls, Wis.; Irvin G. Toepfer, of the Acme Brick Company, Milwaukee, Wis.; H. A. Smyth, of the Wisconsin Brick Company, Madison, Wis.; Charles L. Burnham, of the Burnham Bros. Brick Company, Milwaukee, Wis.; Edward W. Langenberg, of the Langenberg Brick Company, Stevens Point, Wis.; John J. Moroney, president of the Chicago Brick Machinery Company, Chicago, Ill.; Ralph P. Stoddard, secretary of the Common Brick Manufacturers' Association, of Chicago; Charles J. Ebert and Paul Fritche, of the Bricklayers and Masons' Union of Milwaukee; E. E. Meyer, representing THE CLAY-WORKER, of Indianapolis

WHAT IS THE CAUSE OF PLASTICITY IN CLAYS?

Many suggestions have been made as to the cause of plasticity in clays, the one which is suggested as the most probably correct being that the particles of clay have an exceptionally high power of retaining water on their surface, in such a manner that they are coated with a film which acts as a lubricant, whilst not sufficiently fluid to keep the particles quite separate, as in a thin fluid.

Another and more recent suggestion is that plastic clays owe their characteristic property to the presence of organic compounds of alumina. This theory is based on the fact that it is impossible to obtain a solution of humus which is entirely devoid of clay. The addition of a small quantity of alumina produces a solution which filters quite clear, but on evaporation is found to contain a dark brown substance of a flocculent nature and readily adherent to a glass rod used to stir the solution. The substance is unaffected by dilute acids, but is decomposed by concentrated hydrochloric acid. It yields a precipitate of aluminum hydrate on the addition of ammonia, the organic matter present remaining in solution in the ammoniacal liquor. Whether this is sufficient to show the plasticity of clays is due to the presence in them of organic aluminum compounds may be disputed, but the suggestion is quite in accordance with the following well-recognized facts concerning clays: (a) The purest clays are not plastic; (b) the impure clays are most plastic; (c) plasticity is increased by weathering; (d) plasticity is destroyed by heating clays.

BURNING COMMON BRICKS IN PRODUCER-GAS-FIRED CONTINUOUS KILNS.*

Advantages Include Ease of Operation, Economy of Fuel and Uniformity of Results.

THE PRODUCER-GAS-FIRED continuous kiln has come to stay. It has so many advantages over the coal-fired continuous kiln that brick manufacturers should think twice before making an installation of coal-fired kilns. Some of the advantages of the producer-gas-fired kiln are:

1. It is easy to operate.
2. It gives uniform results.
3. It is at all times under the control of the burner.
4. There is less waste than with any other continuous kiln.
5. The goods are free from ash and dirt so common in other systems.
6. It is economical in the amount of fuel used.
7. The conditions under which the setting and unloading of the goods are performed are ideal.

Before getting the producer to work, it is necessary to start fires in the kiln, for which provision can be made by putting in furnaces which discharge into one of the main flues. Conductors are placed three or four chambers ahead of the firing chamber, thus linking the kiln to the main draft flue which is controlled by a suction fan. It will require about forty-eight hours to water-smoke, and raise the temperature in the first chamber sufficiently to burn the gas. With some clays it may take seventy-two hours or even longer. When the temperature of the kiln reaches 700 deg. F. the producers may be started. I have found it a good practice to connect the producers to the kiln as soon as possible after starting them, as the heat from the producers will dry up any moisture there may be in the gas flues, and will warm the flues, thus preventing a possible explosion when the first combustible gas passes through them. It is possible to have gas burning in the kiln within one hour of starting the producers.

Rate of Temperature Rise.

The quantity of gas used can be regulated by dampers or valves placed at the kiln for that purpose, thus securing a gradual rise in temperature. It is not possible to lay down any hard and fast rules as to what the rise in temperature per hour should be. That can be decided only by experimenting with the clay to be burned. Twenty-five deg. F. is sufficient for some, while other clays may be given a rise of 50 deg. F. per hour with safety. It is not a good practice to raise the temperature at the top of the kiln much faster than it can be drawn into the bottom, for if the clay contains a high percentage of fixed carbon and the temperature is increased too fast the surface of the brick will become vitrified and this will imprison the carbon, which in time will form a gas, that, in its effort to escape, finding its passage through the pores of the brick blocked, will swell or bloat the bricks, producing what is commonly known as "black core." This condition may occur in any kiln and can be prevented by admitting abundance of air during the oxidizing period.

It will be seen that the gas kiln is at all times under the control of the operator. With fan draft and gas valves close at hand, there is no difficulty in regulating the supply of oxygen or gas.

Practically No Waste.

There is less waste with the gas kiln than with any other continuous kiln. Since looking for data for this paper, I have taken particular notice of kiln waste. In the first four chambers we examined, containing about 300,000 bricks, by actual count we had only three bricks that were not saleable. In the next four chambers, containing about the same number of bricks we could not find any spoiled bricks—a record, I think, which no other continuous kiln can show.

Economy in fuel consumption is another point in favor of the producer-gas-fired kiln. This is mainly accomplished by using the heat that radiates from the chamber under fire to preheat the chambers ahead. The chamber immediately preceding the firing chamber will usually record 1,200 deg. to 1,300 deg. F. It will readily be seen that two-thirds of the burning has been done by radiated heat, and with many clays it only requires twenty-four hours to finish the burning after the gas has been turned into the chamber.

The kiln at the Don Valley plant has twenty chambers, each holding about 75,000 bricks of about six pounds weight each. We regularly burn the twenty chambers in thirty days. This time includes all stops, such as burning soot out of flues, making repairs on engine or fan, etc. This gives us an average for every working day of nearly 70,000 bricks or 50,000 for every day in the week.

Low Fuel Consumption.

The amount of fuel used per thousand is low in comparison with some kilns. Here again I have taken a number of rounds of the kiln in order to get a fair average. Our average for five rounds of the kiln, or 7½ millions of bricks, has been, for this season, 400 pounds of coal per thousand, the lowest consumption being 385 pounds, and the highest 410 pounds. This includes the coal necessary to produce steam for the gas producers, and power for running the fan, for which we must allow 50 pounds per thousand thus leaving 350 pounds per thousand for the actual process of burning, which, it will be admitted, is a low average, especially when the almost entire absence of waste is taken into account.

There is still another advantage to the credit of the gas-fired kiln. The goods come from the kiln absolutely clean; no ash or dirt from the firing ever reaches the kiln, thus making the conditions for setting and emptying ideal.

Perhaps a word about the producers will not be out of place. Although formidable looking apparatus, they are not difficult to handle. The producer in general use on the gas kiln is a hand stocked, water-sealed producer. Air is forced into it by means of a steam jet-blower and the amount of air admitted will depend upon the condition of the producer, the class of fuel used, and the amount of gas needed at the kiln. This is easy to regulate, and there is no difficulty likely to arise at the producer which cannot speedily be overcome.

ROADS SAVED FRANCE.

With the A. E. F. home from France, the United States has 2,000,000 new advocates of good roads.

French highways opened the eyes of American soldiers. Some doughboys insist even it was fun to hike over them, regardless of seventy-five-pound packs.

Excellence of roads back of the battle lines contributed in a large measure to the maintenance of lines of communication and supply.

Without roads of the French variety, Papa Joffre never could have succeeded in moving an army in taxicabs and stopping the Germans at the Marne when the first drive was made on Paris.

From Brest to the Rhine and LeHavre to Marseilles the American fighters found France honeycombed with the finest avenues of transportation.

"Ship by Truck" facilities were ideal.

They came home wanting the same kind of highways in the United States.—Exchange.

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* Paper by Geo. Cutbush, Todmorden, Ont., read before Convention of Canadian National Clay Products Association.

EIGHTEENTH ANNUAL CONVENTION OF CANADIAN NATIONAL CLAY PRODUCTS ASSOCIATION.

Representatives of Clayworking Industries Exchange Experiences and Discuss Matters of Interest—Review of Proceedings and Abstracts of Some of the Papers.

CO-OPERATION was the theme of the address of President William Burgess of the Canadian National Clay Products Association which met in Toronto for a three-day convention on January 20, 21 and 22. In starting the proceedings of this convention, Mr. Burgess urged clayworkers to get in touch more than ever with all new methods and devices in view of the great changes which are going on in the industrial conditions of the country. "It will require the full effort of every clayworker to protect his own interests," stated Mr. Burgess. "We, as burnt-clay manufacturers, can not afford to pass unnoticed these changes in industrial conditions. I think brick manufacturers have been somewhat slow in taking advantage of the benefits of getting together and working co-operatively. However, I am glad to report that I can see some improvement in this respect. As never before, the present is a time of co-operation and by meeting oftener, we are enabled to discuss problems of every nature and decide how best to overcome our troubles and difficulties. My personal experience in attending conventions has proven such a course to be profitable to myself and the company I represent. Mingling with brother brickmakers and hearing papers and discussions by other clay workers with experience in various lines, gives us many new and profitable ideas."

It was with this spirit of co-operation in great evidence that the eighteenth annual meeting of the Clay Products Association convened. Registration of members was large and an early indication was given that they were assembled to get the most out of each other's experience and in turn to give as much as possible for the benefit of clayworkers as a whole. It was unfortunate that vaccination orders in Quebec and the United States detained a number of expected delegates.

The president in his address made some comments on progress that had been made by the association in the past year. "The executive," he mentioned, "has been called upon to deal with many questions; the coal situation was again serious and had to be watched carefully so that the interests of the clayworking industry would be protected. Railway tariffs are preventing the shipments of certain clay products to border cities and to deal with this a committee has been appointed.

"The removal of Mr. W. W. Pearse, the city architect of Toronto, has interfered with questions which were being discussed with him in regard to the improvement in building by-laws affecting clay products. As soon as a successor is appointed these questions will be again taken up. The workmen's compensation is before the executive committee and it is hoped that an improvement in the methods of making refunds at least will be corrected when our reports are laid before the commission. The Technical Education Committee has been very active and while we must withhold the plans, you may be assured that the committee will give an excellent account of its stewardship at no distant date.

"Mr. Keele continues to give great assistance in the carrying out of tests, the results of which will be of great value to the industry. During the year we undertook to test clay from Labrador, from which Dr. Grenfell hoped to make brick for his mission hospital. These tests were carried on under Mr. Keele and will probably be continued during the coming year."

The delegates to the convention were welcomed by C. A. Millar, as chairman of the Entertainment Committee. Brief responses to the address of welcome were made by Alderman W. H. Freeborn, of Brantford, and D. C. Merkley, of Ottawa. The Executive Committee made its report through Mr. Keith, the secretary, and the minutes of the last annual convention were adopted as printed in the proceedings. The secretary-treasurer reported a larger cash balance on hand than last year.

Committee Reports.

The Tariff Committee reported that efforts had been made to secure some amendment in freight rates as applied to clay products. Clay products are essentially short-haul materials and recent increases in freight rates had operated to the detriment of such classes of freight. As many clayworkers are members of the Canadian Manufacturers' Association, the committee had arranged to take advantage of the tariff and traffic department of that organization so as to secure expert information on traffic matters which would have been difficult otherwise. Just for the present the matter is in abeyance until a projected increase in freight rates has taken effect. If this still acts prejudicial to clay products, the committee will become active again.

The Technical Education Committee, through Mr. Millard F. Gibson, chairman, reported progress on an important scheme for the education in Canada of those desirous of taking up the study of ceramics. Heretofore there have been no opportunities for technical training in Canada or for investigational work on the development of our great natural clay resources. No particulars of the committee's report are available as yet, but the meeting was given to understand that some very outstanding developments are pending. It

DELEGATES TO THE EIGHTEENTH ANNUAL CONVENTION OF THE CANADIAN NATIONAL is expected that in February a comprehensive report will be made public.

Officers Re-elected.

The election of officers resulted in the reappointment of last year's executive by a unanimous vote. The members of the executive are: Thomas Kennedy, Swansea, past president; William Burgess, Todmorden, president; Ryland H. New, Hamilton, first vice-president; Millard F. Gibson, Toronto, second vice-president; T. H. Graham, Inglewood, third vice-president; Gordon Keith, Toronto, secretary-treasurer; and the following councillors, H. B. Hallatt, Tilbury; W. H. Freeborn, Brantford; N. T. Gagnon, Montreal; Andrew Dods, Mimico; John S. McCannell, Milton; F. B. McFarran, Toronto; Charles A. Millar, Toronto; C. B. Lewis, Toronto.

The papers read at the session of Tuesday, January 20, were "Burning Common Brick in Producer-Gas-Fired Kilns," by George Cutbush, Don Valley Brick Works, Todmorden, Ont.; "Pyrometers for Clay Products Factories," by William Printz, Detroit, with the Brown Instrument Company of Philadelphia; "Manufacture of Floor Tile, Roofing Tile, Sanitary Cove, etc," by William Robertson of the Ontario Provincial Clay Products Plant, Mimico; "Stones in Brick Clay," by Joseph Keele, B. Sc., chief engineer, Ceramic Division, Mines Branch, Ottawa; the discussion was lead by William Burgess; "Pottery Possibilities in Canada," by Millard F. Gibson, manager National Fireproofing Company, Toronto.

Pottery Possibilities.

In the latter address Mr. Gibson discussed the possibilities of developing manufacturers of fine porcelain, glassware and clay products generally to take the place of the present considerable quantity imported from Europe and the states. Mr. Gibson told of the many interesting examples of fine pottery, glassware, etc., which have been made under the direction of Professor Keele, at Ottawa. He instanced the discovery of a new bed of white clay near James Bay which with the large deposits of feldspar and other minerals will make it possible for Ontario to go in for the manufacture of fine chinas, ornamental glassware, optical glass, etc., and he felt that every encouragement should be given to the devolopment of the ceramic industry on the widest scale possible.

Tile for Farm Purposes.

On Wednesday, January 21, Mr. T. L. Ferguson, of the Ontario Agricultural College, Guelph, read a paper on "Clay Tile for Farm Drainage Purposes," and Mr. William Burgess described "Modern Methods in Soft Mud Brick Manufacture." Messrs. W. H. Freeborn, of Brantford, and Mr. McClellan of New London, Ohio, participated in the discussion on this topic. An interesting discussion on kilns was started by D. C. Merkley, of Ottawa, who described the Minter System as installed by him.

"Power Transmission and Material Conveying" was the topic of the first paper on Thursday, January 22. It was read by Mr. S. R. Walsh, of the Goodyear Tire and Rubber Company, New Toronto. This was followed by a description of the Dressler Continuous Muffle Kiln by Mr. Conrad Dressler, of the American Dressler Tunnel Kilns, New York. Considerable discussion on this topic ensued.

Mr. J. P. Anglin, president of the Association of Canadian Building and Construction Industries, addressed the delegates on the object of the Association of Canadian Building and Construction Industries and the plans for the coming convention in Ottawa. As members of the building and construction industries he urged them to attend the conference and help to unify the industry. Professor Currelly, of the Royal Ontario Museum, gave some interesting facts about pottery and made suggestions about the development of the pottery industry in Canada.

Delegates were given an opportunity of seeing some of the clayworking establishments in the vicinity of Toronto. The Ontario Provincial Brick and Tile plant and that of the Dominion Sewer Pipe and Clay Industries, Limited, were among the places that were inspected.

The social features of the convention included a theater party and the annual banquet on Wednesday evening, at which over 100 were present. Guests at the dinner included Brigadier-General C. H. Mitchell, C. M. G.; J. C. Reilly, secretary of the Association of Canadian Building and Construction Industries, and Hon. H. C. Nixon, provincial secretary of Ontario. Brief addresses were also made by Mayor Church, Alderman Freeborn, of Brantford; Millard F. Gibson, Thomas A. Millar and William Printz.

Mr. Millard F. Gibson, the first speaker, in proposing the toast to "Affiliated Industries," felt it would be a great source of gratification to the clay products industries if they could assist in some small way in the great work before the allied industries. Mr. J. C. Reilly, who replied, recalled the fact that the clay products industry was one of the most ancient and had a great effect upon the history of the world, instancing the use of bricks, upon which the ancient Babylonians had kept their records, and the influence which the attempt of the ancient Egyptians to force the Hebrew people to make bricks without straw had had upon subsequent history of the world. Speaking of the Association of Building and Construction Industries, which he represented, he dealt with the great need there was for building construction in Canada in the future, and, to assure this, felt the great need was cooperation among those interested in the clay products and allied industries.

In proposing the toast to the Dominion, Hon. H. C. Nixon spoke of the Ontario Provincial Brick and Tile plant, which

CLAY PRODUCTS ASSOCIATION, HELD TORONTO, ONT., CANADA, JAN. 20, 21, 22.

he stated he had found to his surprise was under his direction when he had taken over the provincial secretaryship. For many years, he declared, he had been interested in the great industry of clay products in the province, having been on survey work for the government for some years, when the importance of the tile industry in relation to agriculture was brought home to him. He stated that the government was making it easy for the farmer to secure money for drainage purposes knowing it would be amply repaid.

Stop Buying in Foreign Countries.

In making a survey of Canada and its resources, one realized what a great country it is, declared General Mitchell in replying and he called the attention of his audience to the fact that the nation has just finished the great war, where the sons of Canada (who, incidentally, had had great experience with clay in a variety of ways) had come back filled with ideas and with memories of the things they had seen and heard overseas. One of the greatest assets from the war, he thought, would be in knowledge of intensive farming which the farmers among our armies had gained from watching the French and Belgians. Our men had also seen splendid buildings and would realize what could be done in Canada by using the brains and abilities of her people. The capital of Canada was made up equally of men and material, both of which should be used to develop this splendid country.

With reference to the allied industries which had been mentioned, General Mitchell said he hoped that soon there would be developed pottery and fine arts, as well as the industries in glass and refractory materials for furnaces. He hoped the present export of gypsum, half of which left the country, would be stopped, and recalled the assertion of Sir Edmund Walker that Canada is buying too much from the United States, telling the members present that it was up to them to build up the clay and allied trades, and instead of buying in the foreign markets, to sell to them.

A welcome from the city was extended to the members present from Mayor Church, who assured the convention of the importance of their products in the vital matters of housing the populations of the great cities.

AN EXEMPLARY PORCELAIN INSULATOR FACTORY.

RANKING AMONG the largest and most representative of the electrical porcelain plants of the country, the twelve-kiln insulator factory of the Westinghouse Electric and Manufacturing Company, at Derry, Pa., presents numerous interesting features. Located near the extensive gas fields of West Virginia, it uses gas exclusively for fuel, and is assured of an adequate supply at all times. Good transportation facilities are secured by its proximity to the Philadelphia-Pittsburgh main line division of the Pennsylvania railroad. The personnel of its organization comprises 300 people.

The plant occupies a plot measuring 600x500 feet, and is housed in a group of buildings comprising a two-story brick main structure 500 feet long by 150 feet wide, where the principal manufacturing processes are conducted; a 160x213-foot building devoted to the shipping department; and several smaller structures containing the galvanizing machine and cooper shops.

Pug Mill in Clay Cellar, Westinghouse Insulator Plant

The plant is thoroughly modern in its equipment and the processes follow the best approved methods of ceramic and industrial engineering. Electric motors are used throughout for driving the machinery, the power being purchased from the West Penn Power Company. Both the group and individual forms of drive are employed, with the individual method predominating. It is noteworthy that all of the barrels used for shipping purposes are made at the works.

The products consists exclusively of porcelain insulators, some of the varieties being the different types used in connection with high voltage power transmission lines; insulators designed for low-voltage apparatus; bushings and bus-bar supports. The sequence of manufacturing operations is systematized to a high degree of efficiency.

Mechanical Treatment of Mix.

The batches are usually weighed in lots of about one ton. Since they are sticky and hard to break up, the clays are weighed first and thrown into the "blunger" some time before the remaining ingredients are added. The blungers are great churns which beat and mix all the ingredients with water, so that after several hours of blunging, the mass is reduced to a thick, creamy consistency termed "slip." Having been blunged, the slip from several blungers is run together, mixed and allowed to run over a screen which is kept shaking or revolving by mechanical means. The screen catches the dirt and impurities and coarsely ground materials. The slip which runs through the screen goes into a cistern where it is kept in motion to prevent the heavier ingredients, the flint and feldspar from settling out.

From the cistern the slip is pumped up into filter presses. The water is strained out to a certain degree, leaving a cake containing a more or less definite water content. The time required to do the pumping, and the pressure to which it is necessary to pump, depend primarily upon the body mix. Commercially the pumping takes several hours for electrical porcelain.

After the pumping is completed, the cakes are transferred to a cellar and stored in a compact mass, which stands and ages for the purpose of allowing the water to thoroughly permeate all parts.

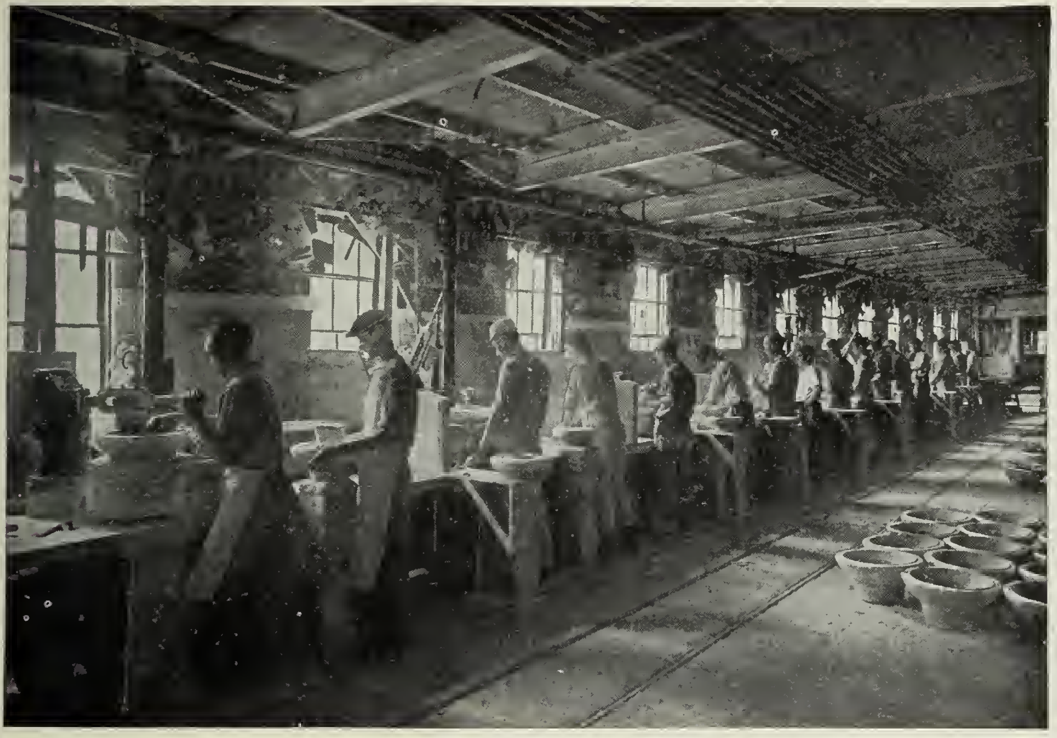
Having reached this stage, the mass is now intimately and thoroughly mixed by machines, to obtain the maximum degree of plasticity and workableness as well as to eliminate as much as possible, the air in the clay. There are various sorts of machines for doing this, the commonest way being the "pug" mill. This is a tube or cylinder, horizontal or vertical, with a central shaft carrying knives. These knives, set at proper angles, cut and push the clay towards the end, where a relatively small hole allows the mixed clay to come out. As the clay comes from the pug mill, it is reworked by hand to a certain extent to eliminate possible flaws.

Forming the Ware.

In working the body into ware, the pugged material goes to the various benches, to be "jiggered" or pressed, or turned on a lathe. All these processes are really mechanical modifications of the ancient method of making clay ware by "throwing"; which consisted in placing a lump of clay at the center of a horizontal wheel which is kept spinning. The article is then pulled up and shaped by hand.

To insure uniformity and gain speed, the jigger wheel came into use. Instead of a flat horizontal wheel, a pot-shaped container is used, which holds a plaster mold. This mold is shaped on the inside in the form of the outer surface of the piece to be manufactured. The inside of the piece is then shaped by a cutting edge or form called a "shoe," which swings down in the arc of a circle or drops like a drill press.

A modification of this method is the jigger press, where the mold is held stationary, and the inside of the clay piece is shaped by a core or plunger which does the spinning as it drops. The plunger must be kept heated to the right temperature or the clay will stick to it. In neither case is the operation quite as simple as it looks. The chunk of clay from which the ware is formed must be shaped by hand and worked somewhat, before dropping into the mold and, furthermore, it must be placed in rather carefully. The jiggered ware must be manipulated and smoothed by the workman while it is being shaped.


Jigger Department of Exemplary Porcelain Insulator Factory

After being formed the mold and shaped ware are allowed to stand for several hours in order to stiffen.

After remaining in the molds a sufficient time to permit handling, the ware is removed and allowed to dry to what is termed the "leatherhard" condition, when it is delivered to the trimmer, who places it on a plaster shape which is the reverse of that in which it was formed. The plaster die fits the inside of the ware, leaving the outside exposed. The whole is set in a revolving container, and the trimmer smooths and finishes off the outer surface. The ware is then dried. In many cases, this procedure is reversed, i. e., the ware is dried to a condition termed "bone dry" and then trimmed. Both methods have their advantages and disadvantages.

Certain types of electrical porcelain, such as bushings and bus-bar supports, are quite difficult to handle by jiggering. In such cases, a cylinder of clay of correct size is squeezed from the pug mill and allowed to dry to a stage just right for turning. It is then placed on a mandrel and turned down like a piece of wood. It is easy to see that if the blanks are not properly pugged, dried and handled, they may turn out defective.

Glazing.

After being carefully dried, the ware is dipped in the glaze. This is a thin coat of glass made up of the same ingredients as the body, in different proportions and with materials added which will cause the mixture to melt to a glass long before the body itself. Generally a coloring oxide is added to produce the desired color.

Burning.

After glazing, the ware is ready for the kiln. Here the pieces are placed in "saggers" or refractory containers which hold the ware. The saggers are stacked one on top of another, until the kiln is filled. The firing generally covers a period of several days. The rate of temperature rise and the progress of heat treating or firing must be watched carefully. The means of doing this are several in number. The two methods of control in general use are pyrometers and pyrometric cones. The chief value of the pyrometer consists in the fact that it records the rate at which the temperature is changing, as well as the actual degree of temperature.

Operation of Putting on Glaze Exemplary Porcelain Insulator Factory

The pyrometric cone is a small pyramidal shaped affair made up of essentially the same ingredients as the porcelain body, but in such proportions that it fuses or bends over at fairly definite temperatures.

A whole series of commercial cones are made covering the range at which all pottery products are fired. The deformation of the cones at various temperatures, 36° F. (20° C.) apart is effected by varying the proportions of the ingredients slightly.

Cone plaques are placed in various parts of the kiln so that a uniform heat will be obtained. In addition to the cone whose deformation temperature is desired, a softer and a harder cone are set in the same plaque. During the firing the softer cone begins to deform first, thus giving warning that the kiln temperature is reaching the desired limit. The heat is then increased very carefully and the "full fire" cone deforms and the temperature is then slowly reduced.

After drawing from the kiln, the war is ready for inspection. No ware with glaze defects or cracks in the body and no over-fired nor under-fired ware is tested or assembled. Before assembling, the separate parts are tested electrically, and after assembling the whole piece is tested. It is then ready for shipment.

A well-equipped laboratory is maintained at the plant for the experimental investigation of mixes. Because of the inherent peculiarities of particular clays which are due to their molecular structure or at least the conditions not fully understood by ceramic engineers, the search for the best porcelain mix involves a large amount of experimentation as well as theoretical computation.

PROMINENT NEW ENGLAND FIRMS CONSOLIDATE.

A consolidation of more than ordinary interest to manufacturers and dealers of brick and other building supplies took place recently when the firms of Waldo Brothers, for many years large building supply dealers, and the Harold L. Bond Company, manufacturers of construction machinery and equipment, both of Boston, joined forces and will hereafter be known as Waldo Bros. & Bond Company, with headquarters at 383-391 Atlantic avenue, Boston, Mass. In an announcement of the consolidation, the new firms say: Each house has for many years served the same trade. The new company will preserve all that is best in the traditions of both. Through centralized control we shall have greater resources and economy of operation. This will mean better service than ever for our customers. We shall be prepared to supply very nearly everything that a contractor buys. We shall be able to outfit a complete job from cellar to roof with all the materials and equipment needed. Our slogan will be "A Complete Service to the Contracting and Building Industry of New England."

If you want the other fellow to do something worth while for you, pave the way by doing something worth while for him.

CURTAILING TRANSPORTATION.

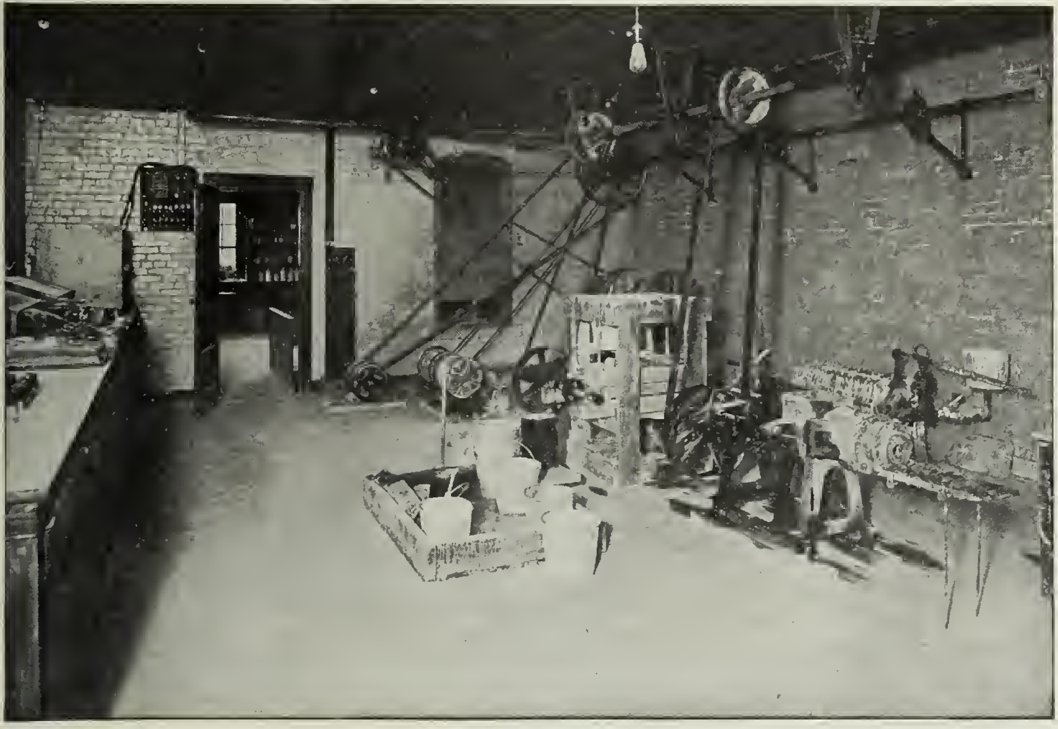
TRANSPORTING materials of construction over great distances which involve a high burden of freight charge is a form of economic waste which the country as a whole has indulged in all to extravagantly. This is true of lumber as well as of clay products, and economists have raved against the idea of shipping lumber from Seattle to New York because so much of the final cost is involved in transportation charges.

In clay products transportation charges mount up rapidly in comparison with the original value of the product because it is a material of weight. Perhaps it was things of this kind moving in the spirit of those in charge of some of the work of the Geological Survey which inspired the thought that it would be a good idea to have such a survey of our clay and shale resources made and published as would bring to every community an understanding of the possibilities in raw material for these products existing near at home.

Some of the old-timers will tell you about the day of the multitude of brick yards, the days before our great railway systems so thoroughly netted the country, when there were more brick yards in the point of number than exist today, though there were probably not as many brick manufacturers. Later, with the development of transportation, came also the development of brick making as a concentrated industry, the quantity element, entering as an essential factor in machinery and labor-saving devices. There are perhaps today fewer of the smaller or community brick yards than in the pioneer days, while on the other hand we have at various points big clayworking industries which turn out a better product, at a minimum cost, which is attained largely through concentration and great capacity. Naturally this calls for a wider field of distribution and for a more extensive use of transportation than was involved when nearly every community had its brick yard.

We will perhaps have to face and answer the question in the future of when and where it is best to concentrate clay working into large industries, and when and where it is better and more practical to distribute it abroad more in smaller units. Possibly there may be developed out of this question machinery and methods involving labor-saving devices which will make economical manufacture practical in small units, and at the same time will insure a quality of product comparable with that now being turned out by some of the larger institutions.

These are among the interesting questions of the day needing some attention, for plainly the freight item is an important one in the distribution of brick and tile over any extension of territory. Plainly, too, any unnecessary stretches in transportation constitute an economic waste which should be abolished. With these undisputed facts before us, without even waiting to solve the question of the future, we can see mighty good sense in the idea of every brick and tile manufacturer cultivating more industriously his home trade. The more of his product he can sell near home the more he can curtail transportation. In many instances he may cut it down to where with good roads he can use trucks and cut out the railroad almost entirely. Moreover, an industrious development of the trade possibilities near home will not only prove an effective means of curtailing transportation but it will also help reduce the ill-feeling and friction which results from sharp competition when manufacturers reach out in distant territory and come into contact with others seeking the same trade. In short, it is a time to give more earnest attention to the home trade development.



Experimental Laboratory Westinghouse Insulatior Plant, Derry, Pennsylvania

OHIO MAN HEADS UNITED STATES POTTERY ASSOCIATION.

William L. Smith, Jr., general manager of the Taylor, Smith & Taylor Pottery Company of this district, has been elected president of the United States Pottery Association, he being the youngest ever to hold that high office. Last year Mr. Smith was second vice-president, but at the recent meeting of the association held in New York he was elected head of the organization without a single opposition. He is well known in the ceramic field throughout the United States.

"What is truth?" asks a headliner. That's easy; truth is the thing that hurts the fellow who is in wrong.

THE CLAYWORKERS' TREE OF KNOWLEDGE

MANY OF THE leaders in the clayworking industries will journey to Columbus, Ohio, in pursuit of knowledge, trade knowledge pertaining to all features of the business, but particularly to the operative features. The economic production of clay products has aliways been the theme paramount of the N. B. M. A. The production of better ware in larger quantities to meet the ever growing demands of the building trades. A knowledge of up-to-date manufacture has always been the shibboleth of the N. B. M. A. That is why we call it an educational organization. The organization has never been commercialized; the dollar mark has never been affixed to N. B. M. A. efforts. The commercialization has been left to the particular branches of the industry which vary in their requirements.

The Clay-Worker artist has illustrated the growth of the various branch organizations dealing with the particular branch of the industry in which the members are especially interested. As a result there has grown from and out of the National Brick Manufacturers' Association, numerous affiliated organizations. The idea is well illustrated in the Clayworkers' Tree of Knowledge. The parent organization has always given every assistance possible to its offspring, and it is natural to expect filial gratitude and support from the auxiliary organizations as they grow and become potential in their various fields. This is as it should be, and the success of the N. B. M. A. is due to the natural affection for the parent by the membership in general. It is a sturdy tree, a tree of slow growth, it may be said; but it is an axiom that slow growth tends to enduring strength. May we not expect the gathering at Columbus the 16th to 20th to write a new chapter of achievement in its chosen line of effort, and cement anew the bond of kinship between all the branches of the industry.

STREET AND ROAD PAVING FOUNDATIONS.

Will P. Blair and other authorities on the subject of paving have been pointing out that not only is some elastic feature a good thing in paving foundations, but the solid concrete foundation which a short time back was thought imperative is not by any means always necessary. A belief is growing out of experiments that a rolled or broken stone base will so perform the drainage function as to stabalize soil support and at the same time afford sufficient voids that frozen moisture content will cause but little expansion. In a word, sometimes a rolled stone base offers advantages even over the concrete base, especially when combined with an asphalt filler. This will not only make practical the use of many road foundations already made as a base for paving, but it will in many instances reduce the cost of new road construction and make paving practical in the matter of first cost.

INTER-PLANT TRUCKING.

The motor truck has become an accepted fact in the clay working industry. Meantime there has also developed lately a keen interest in the subject of power trucking on the yard and in and about the plant itself to replace hand labor and wheel barrow work. Because of the scarcity and high price of labor there is active inquiry on all sides as to better methods and forms of equipment for inter-plant trucking.

Two general forms of power trucking are bidding for favor here. One is the electric truck, the other is the familiar gasoline truck. Also there goes with them two or more broad ideas as to equipment. One takes the line of trailers and the other lift platform and transveyor trucking.

Motor-driven trucks for yard and plant service promise to contribute materially to labor saving in the clayworking industry during the next few years, and those who have conducted experiments or have something to offer for this purpose will find a ready audience among the clayworkers, because on all sides there is a seeking for improvements of this kind.

A FINE DISPLAY OF FRONT BRICK.

AS THE READER WILL SEE by the accompanying photograph, the display of front brick in the reception room of the office of the Claycraft Mining and Brick Company, Columbus, Ohio, is one of the finest in the land. Those who will visit the convention are expected to call and inspect this fine exhibit at some time during their stay in Columbus. They will find an old time N. B. M. A. member ready to extend the glad hand, Mr. W. H. Hoagland, general manager of the Claycraft Company, who was for many years a regular attendant at all N. B. M. A. meetings. His chief lieutenant in the brick line, William T. Mathews, sales manager of the Claycraft Mining and Brick Company, is secretary of the local entertainment committee. He, too, is a past master in glad hand work, so visiting brickmakers can expect a very cordial welcome. The office is in the Hartmann Building, a couple of blocks from the Deshler Hotel.

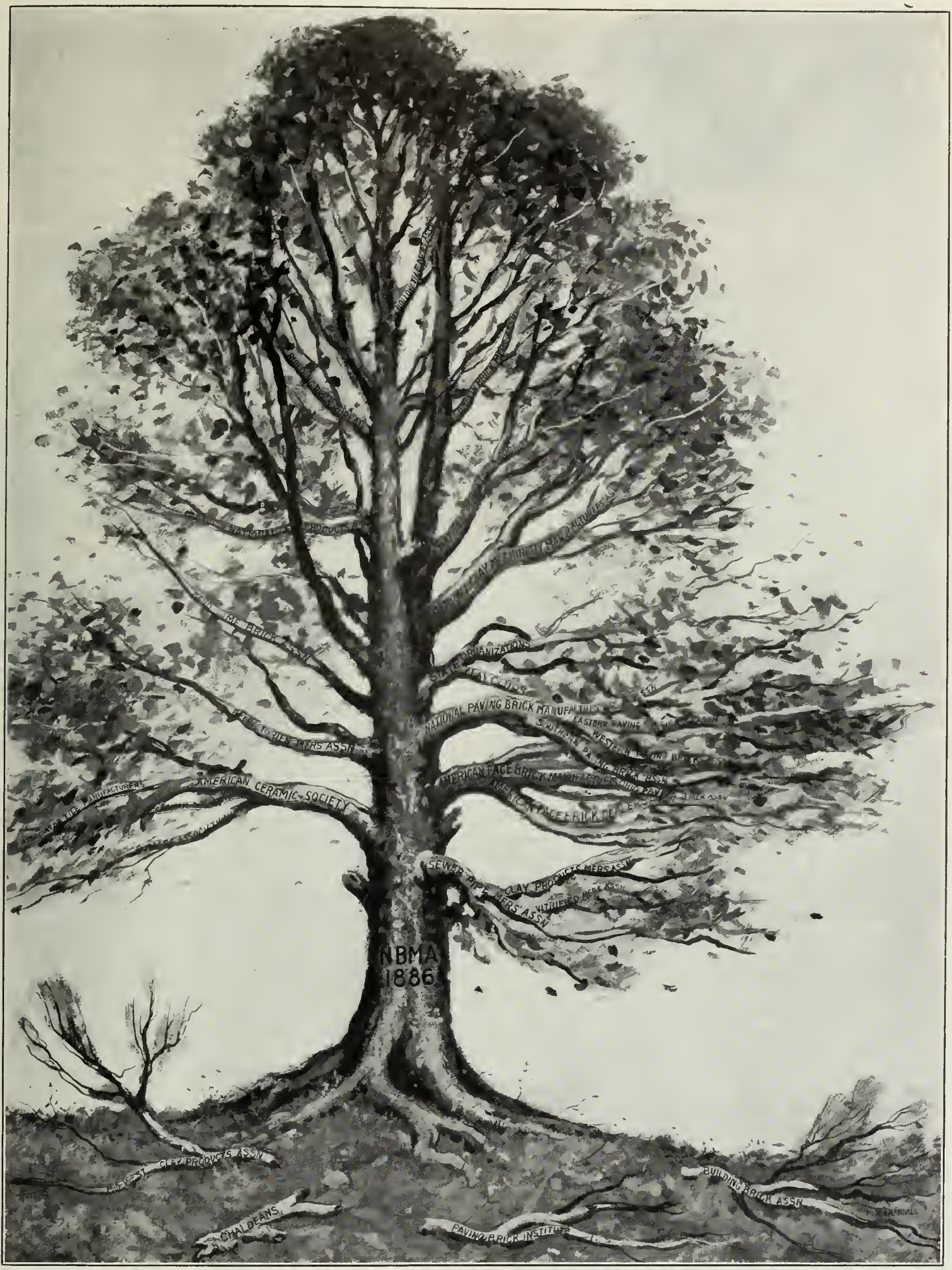
PROPHESIES BUSY TIMES.

J. W. Starbuck, representative of the Manufacturers' Equipment Company, of Dayton, Ohio, was a caller at the Clay-Worker office recently and reported busy times for his company. Mr. Starbuck has been very busy for some months installing a new outfit for the St. Anne Brick and Tile Company, St. Anne, Ill., including a Steele brick machine, pug mill and automatic cutter and a twelve tunnel Justice radiated heat dryer, and a producer gas burning system connected with round kilns. This company will build another plant adjoining their present one and will start work on same as soon as weather conditions permit. The St. Anne company manufactures drain tile and hollow building tile. Mr. Starbuck prophesies very busy times for brick manufacturers for the next five years and says the wise brick man is putting his plant in condition to take advantage of this increase.

LAND DRAINAGE FEATURES.

Some interesting features pertaining to the increase in land values and other advantages of tile drainage are to be found in the current literature of the times. For example, there comes through Engineering News Record a story told at the National Drainage Congress by Isham Randolph, a Chicago engineer, about how land values have been increased through drainage in the Little River district in Missouri. Land that sold primarily at $16 an acre before drainage is now bringing from $55 to $75 an acre. Other examples are given illustrating how tile drainage increases the value of land much more than the cost of drainage.

Another interesting feature described by an Iowa farmer tells of an ingenius method for getting stock water out of his land drainage system. His stock barn is on lower ground than this land being drained so he inserted a barrel in the drainage system and from this led a pipe to his watering trough and was able thereby to have clear water for his hogs practically every day in the year. This suggests some interesting possibilities of combining drainage work with stock water supply.



THE CLAYWORKERS' TREE OF KNOWLEDGE.

OFFICIAL ANNOUNCEMENT.

The Thirty-Fourth Annual Convention of the National Brick Manufacturers' Association and Allied Organizations to Be Held at the Deshler Hotel, Columbus, Ohio, Feb. 16-21, 1920.

A Meeting of the Common Brick Association of America Will Be Held in Conjunction With the N. B. M. A. and Other Affiliated Associations.

THE THIRTY-FOURTH ANNUAL CONVENTION of the National Brick Manufacturers' Association will be held at Columbus, Ohio, February 16 to 20, 1920. The National Association is an educational organization, and as Columbus is a great educational center, being the home of the first clay school established in America, it is anticipated that the convention will be more largely attended than any for several years. Of course, the wish is father to the thought, but the fact that the Common Brick Association and other affiliated organizations will meet there is ample justification for the prediction that a new record of attendance will be established.

Unexcelled facilities are afforded for all the various meetings, and the cordial co-operation of the officials of the Ohio State University, particularly the Ceramic Department, insures the helpful influence of that great institution.

A Trip to the University.

There will be a special trip to the Ohio State University Thursday afternoon in automobiles, when the delegates will be shown through the grounds, which now includes 600 acres of land and thirty-four buildings, many of them imposing brick structures, that will surely look good to visiting brickmakers. The Department of Ceramics will be visited and the various engineering departments, laboratories and workshops where the students are taught clayworking will be inspected.

Hotel Deshler Headquarters.

The sessions of the convention will be held in the Hotel Deshler, which will be headquarters during the week. It is an up-to-date hotel, practically every guest room has a bath. The rates range from $2.50 up, per guest, on the European plan. The Deshler is the home of the Rotary and Kiwanis clubs. The first meets on Tuesday and the second on Wednesday. Its slogan is service. There is a quick service grill in the basement and a spacious dining room adjoining, where an excellent orchestra furnishes popular music, and dancing is enjoyed by those so disposed. The main lobby is spacious and luxuriously appointed. The guest rooms are attractive. Each has running ice water and every other modern convenience; tidiness prevails in every department. There is a smoking room on the main floor, where a light luncheon is served at noon, and the gentlemen can enjoy button-hole talks and a good cigar and soft drinks between sessions.

The Convention Hall.

The sessions of the conventions will be held in the elegant convention hall on the mezzanine floor of the hotel. The meetings of the auxiliary associations will be held in other suitable rooms, announcement of which will be made on the public bulletin.

The machinery and supply dealers will rendezvous on the third floor, which is but a short flight above the mezzanine floor, and can be reached by the elevators, which are speedy and comfortable, handling large crowds with remarkable rapidity.

Meeting of Affiliated Associations.

The Common Brick Manufacturers' Association of America will meet in the main convention hall Monday, Tuesday and Wednesday forenoon. Further announcement, program, etc., will be found in another column.

The National Brick Manufacturers' Association will meet Wednesday afternoon, Thursday and Friday.

The Central Ohio Section of the American Ceramic Society will meet Tuesday and Wednesday.

The Ohio Paving Brick Manufacturers' Association will meet Wednesday and Thursday.

The Ohio Drain Tile Manufacturers' Association will meet Thursday and Friday.

The Red Brick Section of the Ohio Face Brick Association will meet Thursday and Friday.

The National Clay Machinery Association will meet Thursday and Friday.

The N. B. M. A. Official Bulletin.

The headquarters of these various organizations and the exact time and place of meeting and the headquarters rooms

N. B. M. A. Covention Calendar

Monday, Feb. 16 **All Day**	Registration Delegates and Guests, National Brick Manufacturers' Association and Common Brick Association. Deshler Hotel.
2:00 P. M.	Opening Session, Common Brick Association, Convention Hall, Deshler Hotel.
Tuesday, Feb. 17 **All Day**	Registration Delegates and Guests National Brick Manufacturers' Association, Secretary's Headquarters, Deshler Hotel.
9:30 A. M.	Session Common Brick Association, Convention Hall.
2:00 P. M.	Session Common Brick Association, Convention Hall.
6:30 P. M.	Informal Dinner Common Brick Manufacturers' Association, Hotel Deshler.
Wednesday, Feb. 18 **9:30 A. M.**	Session Common Brick Association, Convention Hall.
10:00 A. M.	Session Central Ohio Section, A. C. S., in one of the Assembly Halls, Deshler Hotel.
2:30 P. M.	First session National Brick Manufacturers' Association, Convention Hall, Deshler Hotel.

of the machinery manufacturers and supply dealers will be announced on the illuminated bulletin of the N. B. M. A. in the main lobby of the Deshler.

The Smokerette.

The informal reception and supper will be held Wednesday evening in the convention hall. Delegates and those accompanying them, including the ladies, will participate. Music, dancing and other amusement features will make the event a memorable one. The Association badge is the only requisite of admission.

The N. B. M. A. Banquet.

The social event of the week, the annual banquet, will occur Thursday evening in the convention hall. As in former years, it will be a subscription dinner under the auspices of the Executive Committee of the N. B. M. A., assisted by the local Entertainment Committee. Among the guests of the evening will be General Leonard Wood, Governor Cox, ex-Mayor Karb, the Reverend C. F. Chauncey, and other noted speakers. Members are expected to bring their wives, daughters or sweethearts, as the case may be. Full evening dress is in order, but is not essential.

Souvenir Badge and Number Button.

An appropriate souvenir badge and number will be presented to each delegate, and a guest badge to those accompanying them, same being furnished with the compliments of the local committee.

Entertainment of Ladies.

A special committee having in charge the entertainment of the ladies will provide various amusements, such as matinee parties, auto trips, shopping tours, etc.

7:00 P. M.	Informal Reception and Smokerette for N. B. M. A. and other convention delegates and visitors, including the ladies.
Thursday, Feb. 19 9:30 A. M.	Second session National Brick Manufacturers' Association, Convention Hall.
10:00 A. M.	Session Ohio Paving Brick Manufacturers' Association, Hotel Deshler.
10:00 A. M.	Session Ohio Drain Tile Manufacturers' Association, Deshler Hotel.
2:00 P. M.	Trip to the Ohio State University. Automobiles will leave Deshler Hotel at the appointed time.
7:00 P. M.	Annual Banquet N. B. M. A., Deshler Hotel.
Friday, Feb. 20 9:30 A. M.	Session National Brick Manufacturers' Association, Convention Hotel.
11:00 A. M.	Session National Clay Machinery Manufacturers' Association. Parlors Deshler Hotel.
2:30 P. M.	Final session National Brick Manufacturers' Association.
Saturday, Feb. 21	Side trips to clay plants in vicinity.

A special program of the local events will be distributed by the Secretary of the N. B. M. A. at headquarters on the mezzanine floor, where visitors are requested to call and register on arrival.

N. B. M. A. Sessions Open to the Public.

All sessions of the National Association are open to the public. Those interested in the discussion of the various questions pertaining to better building and kindred themes will be welcome.

Those interested directly or indirectly in clay work of any character or the use of clay products of any sort are invited to join the Association and participate in the proceedings of the convention. Members and their families or friends who may accompany them will be expected to participate in all the entertainments and proceedings.

Those desiring further information as to requisite of membership in the N. B. M. A., formal program, etc., are requested to communicate with the Secretary at Indianapolis.

THE EXECUTIVE COMMITTEE,
J. W. Robb, President.
Theodore A. Randall, Secretary.

PROGRAM.

First Session, Wednesday, February 18, 2:30 P. M.

Opening Prayer—Rev. C. F. Chauncey, Columbus, Ohio.

Address of Welcome on Behalf of the City—Hon. James J. Thomas, Mayor of Columbus.

On Behalf of the Columbus Convention Association—John Y. Bassell, Manager.

Response to Address of Welcome—R. G. Eisenhart, Horseheads, N. Y.

President's Annual Address—J. W. Robb, Clinton, Ind.

Treasurer's Report—John W. Sibley, Birmingham, Ala.

Secretary's Report—Theodore A. Randall, Indianapolis, Ind.

Report of Committee on Technical Investigation—Albert V. Bleininger, Secretary, Pittsburgh, Pa.

Reports of other Standing Committees.

Election of Officers and Members of Standing Committees.

Installation of Officers.

1. "Retrospect and Prospect"—George M. Fiske, Boston, Mass.

2. "Americanism in the Clay Industry"—Col. Edward Orton, Columbus, Ohio.

Discussion led by Charles H. Bryan, Detroit, Mich.

Second Session, Thursday, 9:30 A. M.

3. "Common or Horse Sense in the Manufacture of Clay Products"—Walter Colyer, Albion, Illinois.

Discussion led by W. E. Dunwody, Macon, Ga.

4. "The Wheel Barrow Versus the Motor Truck"—Marion W. Blair, Ridgeway, Pa.

Discussion led by Ben H. Richards, Edwardsville, Ill.

5. "The Marketing of Clay Products"—John L. Rice, Akron, Ohio.

Discussion led by Thomas E. Wilson, Pittsburgh, Pa.

6. "The Brick Market" (Illustrated)—I. A. Ryttenberg, Sumter, S. C.

Discussion led by B. W. Ballou, Buffville, Kansas.

7. "Plant Equipment." General discussion led by R. C. Burton, Zanesville, Ohio, and to be illustrated by views of brick and tile plants in the Columbus District.

8. "Clay and Clay Products of the Far North" (Illustrated)—Jay Clark, Indianapolis, Indiana.

Discussion led by Ellis Lovejoy, Columbus, Ohio.

Third Session, Friday, 9:30 A. M.

9. "Treatment of Clay in the Bank"—Wm. Burgess, Toronto, Ont., Canada.

Discussion led by Lee B. Humphreys, Bridgeville, Pa.

10. "Drying Brick"—Warren Griffiss, Baltimore, Md.

Discussion led by George A. Parry, Boston, Massachusetts.

11. "The Development of the Tunnel Kiln" (Illustrated)—C. B. Harrop, Columbus, Ohio.

Discussion led by Dr. A. V. Bleininger, Pittsburgh, Pa.

12. "Wage Systems"—Douglas F. Stevens, Cayuga, Ind.

Discussion led by Harry C. Cramer, Lexington, Ky.

13. "FirePrevention"—Walter A. Hull, Pittsburgh, Pa.

Discussion led by Jotham Post, East Williston, L. I.

Fourth Session, Friday, 2:00 P. M.

14. "Profit Sharing"—J. P. Williams, Milton, Pa.

Discussion led by Tom Green, Sioux City, Iowa.

15. "Traveling Over Brick Paved Roads" (Moving Picture)—W. R. Mandigo, Kansas City, Mo.

Discussion led by Will P. Blair, Cleveland, Ohio.

16. "Government Service in Developing the Clay Products"—Prof. R. T. Stull, Columbus, Ohio.

Discussion led by John T. Hummert, Quincy, Ill.

17. "Jones, He Pays the Freight"—J. G. Barbour, Canton, Ohio.

Discussion led by G. B. Luckett, Crawfordsville, Ind.

Report of Committee on Resolutions.

Miscellaneous Business.

(Note.—In addition to the foregoing addresses and papers, various questions pertaining to brickyard practice will be discussed. Any member desiring information on any specific detail of the business may obtain same by submitting questions in writing to the Secretary.)

AMERICAN CERAMIC SOCIETY.

Annual Meeting Philadelphia, February 23 to 26, 1920.

PLANS FOR THE Annual Meeting are being rapidly perfected. The main meeting room will be the Rose Garden of the BellevueStratford, and four adjoining rooms are available for sectional meetings.

On Monday evening a smoker, or Section Q, will be held in the Clover Room. Singing, moving pictures, and stunts by some of the members will comprise the entertainment. A buffet supper will be provided, as well as cigars and cigarettes. There will be no expense to the members attached to this occasion.

On Tuesday evening a banquet will be held in the Rose Garden, for which the tickets will be $4.00. An excellent dinner is assured, with the accompaniments of good music and "smokes."

For Wednesday afternoon and Thursday morning trips have been arranged to various industrial plants, historical points, and places of general interest. A special trip for the ladies who accompany members to the meeting has been planned for Wednesday afternoon. So much for the social affairs of the week.

On Monday morning the regular business meeting will be held and on Monday afternoon papers of general interest will be presented. On Tuesday the Industrial Divisions of Glass, Refractories, Enamel, and Terra Cotta will hold separate meetings, and in addition a program of interest to those connected with the white ware, porcelain, and wall tile will be given.

Wednesday morning the business of the Society will be closed up, including the election of officers.

PROGRAM OF SECOND ANNUAL MEETING OF THE COMMON BRICK MANUFACTURERS' ASSOCIATION OF AMERICA, HELD AT COLUMBUS, OHIO, FEBRUARY 16, 17, 18, 1920.

Monday, February 15—Forenoon.

The members of the association and guests will arrive in Columbus early Monday, and the forenoon will be given to the necessary hotel arrangements and the registration at association headquarters on the convention floor of Hotel Deshler. Every session during the convention will begin promptly at the appointed hour, even if the chairman and secretary are the only persons present—these are real business meetings and everybody in attendance is urged to be in the convention hall a few minutes before the hour of 9:30 a. m. and 2:00 p. m. in order that there will be no disturbance of the proceedings. All sessions will be short and snappy.

Monday Afternoon—2 O'clock Sharp.

President's address—William Schlake, Chicago.

Treasurer's report—Ernest S. Barkwill, Cleveland.

Secretary's report—Ralph P. Stoddard.

Impotance of Knowing Your Costs—By Louis E. Schull, of Earnest & Earnest, Chicago.

Why There Should Be a Standard Size for Common Brick—William Carver, architect of C. B. M. A. of A.

How the Manufacturer and Bricklayer May Co-operate—Thomas R. Preece, vice president, International Bricklayers' Union.

Appointment of nominating committee.

Reading of changes in by-laws to be voted on Monday.

Tuesday, February 17, Forenoon—9:30 Sharp.

The Beauty of Common Brick—Warren S. Griffiss, Baltimore.

What the Architect Does Not Know About Common Brick—D. Knickerbacker Boyd, F. A. I. A., Philadelphia.

Report, by states and districts, upon (1) labor, (2) fuel, (3) empty car situation, (4) stock, and (5) demand situation. This feature will be followed by general discussion of trade conditions, and the 1920 outlook.

Tuesday Afternoon—2 o'clock Sharp.

Putting Your House in Order—Earnest E. Bell, vice-president Hydraulic Steel Company, Cleveland.

You and Your Business—D. H. Nichols of the Nichols-Moore Company.

The Story of Common Brick—R. S. Collier of the Sam B. Anson Company, Cleveland.

What Three Bricks Will Do—Ralph P. Stoddard.

Tuesday Evening—6:30.

Brickmen's dinner, Convention Hall, addressed by James F. Basiger, general manager Chicago Housing Association (illustrated); William N. Cary, Albany, N. Y. (illustrated).

Wednesday, February 18, Forenoon—9:30 Sharp.

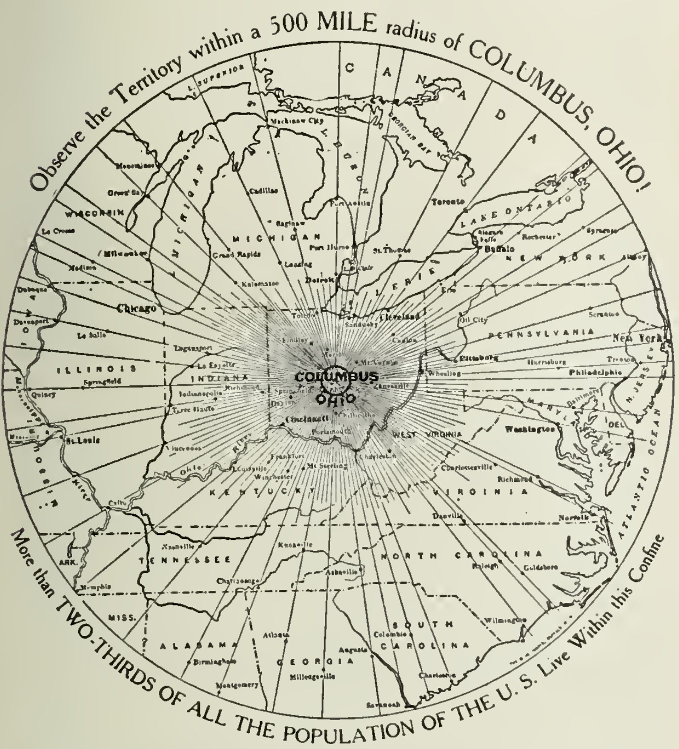
Business session following usual order with election of directors.

The officers and directors of the association are: President, William Schlake, Chicago; vice-president, Charles H. Bryan, Detroit; treasurer, Ernest S. Barkwill, Cleveland; secretary-manager, Ralph P. Stoddard. Directors: Charles H. Bryan, Detroit; Ernest S. Barkwill, Cleveland; Tom W. Green, Sioux City, Iowa; Warren Griffiss, Baltimore; Fritz Salmen, Slidell, La.; John P. Cahoon, Salt Lake City; Charles Francis, Muskogee, Okla.; William Schlake, Chicago; W. N. Cary, Albany; Max D. Almond, Corsicana, Texas; George A. Parry, Boston; J. F. Reynolds, N. Haven, Conn; B. H. Ballou, Buffville, Kan.

INTERESTING CLAYWORKING PLANTS NEAR THE CONVENTION CITY.

COLUMBUS IS OFTEN called the "Convention City," as it is well known as an annual meeting place of organizations of all kinds, state and national. It is estimated that in the year 1919 approximately 2,300,000 were entertained in Columbus. Columbus has an active and aggressive Convention Bureau, who see to it that the advantages of the city for conventions are presented to every national organization. Some of these advantages are as follows:

Columbus is located in almost the exact center of the State and is within six hours' ride of every county seat in Ohio.



Columbus is within a night's ride of 60 per cent of the population of the United States.

Columbus has 16 railroad divisions entering the city from all directions and 11 interurban electric lines.

Columbus has convention halls and auditoriums capable of seating more than 50,000 persons at one time.

At any rate, to brick manufacturers Columbus is this year the convention city and from February 16 to 21 will be the mecca of all good brickmakers.

To many progressive manufacturers the annual convention of the N. B. M. A. means more than a week's entertainment in a hotel or convention hall. Many take opportunity at this time to visit brickmaking and other clayworking plants en route to or in the convention city and vicinity. Therefore they will want to know before leaving home what plants are of interest to them in and near Columbus.

The city of Columbus itself contains no large brick works The surface clay that is free from limestone pebbles is too shallow for a permanent plant and the shale that is near the surface, in the northern part of the city, is highly carbonaceous. This black shale (Olentangy) is not only not plastic under ordinary conditions and requires fine grinding and the mixture of some surface clay to form a good bond in the die of the auger machine, but it requires a long time for oxidation or decarbonization and, if brought to vitrification heat before oxidation is complete, will swell or black core badly.

There has always been one or more small plants making soft-mud brick from the surface clay, in the most favorable locations and there is now one such plant, that of the Kulp Brick Co., Frebis avenue and 22nd street.

Various attempts have been made to work the Olentangy shale, but none have proven permanently profitable. At present there is one plant, that of The Shale Brick Co. (recently organized to take over the plant of the Hallwood Brick & Tile Co.) This plant, at 18th avenue and Koebel street, has a Haigh Continuous Kiln and fair results are being obtained. The continuous kiln is well adapted to a carbonaceous shale, since it is easily and regularly operated under oxidizing conditions.

About eight miles east of Columbus on the Big Walnut creek, at Taylor Station, of the B. & O., and the Pennsylvania railroads, is an exposure of the Bedford shale, one of the prettiest and most uniform red-burning materials in the country. There are two plants operating here very successfully, the Columbus Clay Mfg. Co., making drain tile, and the Franklin Brick & Tile Co., making building brick and drain tile. The former is a well-known drain tile factory owned and operated for many years by the Landrums, who have another plant at Junction City.

The Franklin Brick & Tile Co. are the largest brick manufacturers in the Columbus district. They have recently greatly enlarged their plant and are now preparing to build a new plant alongside the old one. This new plant it is proposed to make the most economical and efficient that the latest development of the art can produce. This is to be especially for drain tile which are to be burned in the Dressler tunnel kiln. The experiment of burning drain tile in a tunnel kiln will be watched with much interest. Mr. T. W. Garve, of the Ceramic Supply & Construction Co. is making the plans and will have charge of the construction.

The success of this concern has been due much to the policy adopted by the president and general manager, Mr. F. M. Morrison, of running the plant during the winter months on drain tile. This policy is worthy of consideration by many manufacturers of common brick. The season when building brick are not much in demand is the season when drain tile are most in demand and the operation of the plant during these months may make the difference between profit and loss at the end of the year's business.

At Groveport, about 12 miles south of Columbus, on the Hocking Valley railway and the Scioto Traction line, is the face brick plant of the Claycraft Brick Co. where are made the handsome and popular red texture brick, with brown, gun metal and variegated shades. The texture is produced by a wire stretched across the die, the only case known to us that a wire will give such a peculiar and unique effect, the rolling up of wavy ridges across the bar of clay, producing a beautiful, distinctive surface. These brick are made from an alluvial clay of rather irregular consistency that is hard to handle, since it cracks in drying and burning and can only be worked successfully by the mixture of a portion of grog, bats or burned debris of their own clay.

Twenty-four miles north of Columbus, at Delaware, is a very interesting plant, that of the Delaware Clay Mfg. Co. This plant is interesting both because of the successful utilization of a lime-pebbly clay and because of some unique, original features. One's first thought is that in a state so prolific in good clay one would undertake to establish a large plant on a drift deposit containing so much of the troublesome lime fragments, yet the Denisons have by industry, economy and ingenuity made a fortune out of this material. Those who are troubled with limestone pebbles in their clay would be interested in seeing how the Denisons treat their clay. They will also be interested in their method of drying their hollow bricks and tiles on a conveyor and burning them in continuous kiln.

The Denisons are pioneer drain tile makers, making large sizes of drain tile. They also had a plant in Delaware making fireproofing, but sold this out a few years ago to the National Fireproofing Co., who still operate it. They have a plant in Cleveland running on the Denison Interlocking Tile.

THE COLUMBUS BRICK AND POTTERY SECTION.

The great brickmaking and pottery section of Ohio adjacent to Columbus is on the carboniferous formations south and east of the city. In the Hocking Valley (south) and in the Muskingum Valley (east) almost every town has at least one clayworking plant. In starting out for a trip through this section we will go south on the Hocking Valley railway, making our first stop at Logan, about 50 miles from Columbus. The plants of most interest here are the old plant of the Logan Clay Products Co., which have for many years made an excellent grade of sewer pipe, and the plant of the Hocking Valley Brick Co., which makes paving brick. These plants are close in the city, the clays being hauled in from outside.

About six miles south of Logan is Haydenville, where for 40 years or more has been a large plant making sewer pipe and fireproofing. This plant is now owned and operated by the National Fireproofing Co.

THE NELSONVILLE DISTRICT.

About six miles further south is the city of Nelsonville, which has been long noted for the high quality of its paving brick, made by the Nelsonville Brick Co. Another interesting plant in Nelsonville is that of the Hocking Valley Fire Clay Co., which makes a specialty of salt-glazed face brick.

Fourteen miles south of Nelsonville, at the end of this line, is the college town of Athens where is the paving brick plant of the Athens Brick Co. From Nelsonville the Hocking Valley has a branch running northeast to New Straitsville, 20 miles. About 13 miles out on this branch, at Greendale, is the famous plant of the Hocking Valley Products Co., which is said to have cost a million dollars. Here are made the Greendale Rugs, a well-known brand of face brick.

At New Straitsville is the large face brick plant of the Straitsville Impervious Brick Co. This is a successful establishment, due largely to the management of one of the ablest and brightest men in the business, Mr. Jno. Martin, and to the large selling organization of the Thomas Moulding Brick Co., the chief owners of the plant.

SHAWNEE AND VICINITY.

About two miles from New Straitsville, over a brick-paved road, auto-busses take you to Shawnee. About half way over, a little off the highway, is the widely-known brick plant of the Ironclay Brick Co. This plant makes by the dry-press process the handsome and durable flashed iron-spot brick that are to be found in some of the best buildings all over the country. This plant has long done a successful business under the management of Mr. J. M. Adams, of Columbus, one of the high lights in the face brick game, a director of the American Face Brick Association.

In the village of Shawnee is the plant of the Claycraft Brick & Mining Co. The old dry-press plant of this company is not in operation, but the stiff-mud plant is producing high-grade face brick that have had a prominent place in the market for many years. The brick are burned by producer gas in a Youngren kiln. The office of the company is in Columbus and if you come to the Convention you should meet their general manager, Mr. W. H. Hoagland, a prominent man of affairs, a director of the Chamber of Commerce, or their sales manager, Mr. Mathews. If you are interested in face brick you will want to visit the display rooms of the Claycraft Co., as well as of the Ironclay Co.

At Shawnee also is the firebrick plant of the Central Refractories Co., whose headquarters are at Newark.

A ROOFING TILE PLANT.

Over the hills by auto-bus about 8 miles is the county seat of Perry County, New Lexington. This town is widely known as having the finest roofing tile factory in the world, the main plant of the Ludowici-Celadon Co. This plant is not open to the public for visitations. Permission must be obtained from the Chicago office. Near the depot is another plant of the Central Refractories Co. This plant makes chiefly a rough-texture face brick from shale.

Many would prefer to go from Shawnee by B. & O. to Junction City, 10 miles, and visit the plants of the Junction City Sewer Pipe Co. and the drain tile plant of the Rush Creek Clay Co.

FLOWER POTS AND POTTERY.

From New Lexington or from Junction City the Pennsylvania takes you to the pottery town of Crooksville, where there are some 15 stoneware potteries and one white ware pottery. Three miles beyond Crooksville is Roseville, another pottery town, where are made stoneware, flower pots and art pottery. At Roseville also are two brick plants, one the well-known face brick plant of the Hydraulic Co., making from coal measure clays a flashed iron-spot face brick.

THE GREAT CLAY CENTER, ZANESVILLE.

From Roseville it is only 10 miles to Zanesville, the "Clay City," one of the most interesting clay centers in the country. Here are the well-known art potteries, the Roseville Pottery, the Weller Pottery and the Owens Pottery and the large wall tile factories of the American Encaustic Tiling Co. and of the Mosaic Tile Co., the former the largest tile factory in the United States. These companies are using tunnel kilns as well as the regular pottery kilns.

Brickmakers may be more interested in the large paving brick plants of the Burton-Townsend Co. and the Harris Brick Co.

From Zanesville it is 58 miles back to Columbus by the B. & O., the Pennsylvania or the Ohio Electric.

THE OPPORTUNITY AFFORDED BY THE NATIONAL CONVENTION.

In northern and eastern Ohio are many interesting plants in every branch of clayworking, as Ohio still easily maintains her lead of all other states in the value of her clay products. The convention entertainment committee of the Columbus manufacturers will gladly furnish further information of Ohio plants and how to get to them.

Come to the Convention and make the most of the opportunity to extend your knowledge of the art in which you are engaged and you will return to your home with greater enthusiasm for your work and better prepared to overcome any special difficulties you may have in the manufacture of your products. Surely no better investment can be made than in attending the Convention. Bring your superintendent with you—and your wife also, the superintendent of your home. She will be well looked after by a special committee for the entertainment of the ladies.

THE PAVING BRICK MANUFACTURERS APPEAL TO THE BUREAU OF PUBLIC ROADS FOR UNBIASED CONSIDERATION.

On the 26th day of January, 1920, a hearing was held before Mr. Thos. H. Macdonald, Director of the Office of Public Roads, Washington, D. C., upon matters set forth in a statement in the nature of a memorial which was filed with that office.

This memorial set forth that the paving brick industry in this country was made the subject of discrimination and prejudice in the use of brick by reason of the present practice of submitting road improvement projects on the part of various State Highway Departments to the Director of the Bureau of Public Roads, for his approval and the extension of Federal Aid to the state for the improvement of such projects. The practice complained of particularly was that by which, but one or at the most two types of brick roads were submitted in competition with other road materials and even where the types which operated to discriminate against brick were submitted, in addition to the natural restriction which would follow the two types, these types were burdened with unnecessary provisions increasing the cost of the same, thus forcing from the contractors unnecessarily high bids upon brick, which, in comparison with the design and specifications which provide for the improvement of roads with materials other than brick, by reason of the possible low cost for the construction of the roads other than brick, placed brick disadvantageously in the public eye and thereby prejudiced their use.

It was very clearly shown by the testimony of those present that brick roads, by the consideration of less expensive types, that made possible by the use of local stone en route the projects, great saving could be had and the roads constructed at less expense. It was shown that these advantages could be secured and great waste of public money saved as against the use of expensive concrete foundations which some of the State Highway Departments have limited their specifications to, thereby denying to the Bureau of Public Roads the exercise of judgment in approving one or a number of types in which great saving could be made.

Illustrating the possibilities of economy in this direction and the advantage to which brick is entitled, and public benefit extended, it was shown that the brick improvement of the National Road from Zanesville, Ohio, to Wheeling, W. Va., has been built with splendid results by the use of a soft sand stone for the foundation which was found en route and along the length of this road. It was also shown that about one hundred miles of road had been built in the past eleven years in Mahoning County, Ohio, where the slag from the iron furnace had been used for foundation purposes with the most satisfactory results; that a great many miles of pavement have been constructed without the expense of a curb along the side; that many engineers agree that it is a useless and expensive appendage.

These and other features of economy it was shown, have not been submitted to the consideration and judgment of the Director of the Bureau of Public Roads from various State Highway Departments. The State Highway Department of Illinois particularly was shown to be one of the Departments which by limiting their road projects to the restricted and expensive design of brick construction was entailing unnecessary expense and extravagance in the construction of Illinois highways.

The Director assured those present at the hearing that their suggestions would be given most careful consideration because it was insisted by those presenting the memorial that under the practice existing the Director was denied the opportunity to exercise the responsibility of conserving national funds by being compelled to approve roads which might be either extravagant or uneconomical.

THE ANDERSON BRICK CONVEYOR SYSTEM.

Labor saving devices today are recognized as big profit making items, so that the manufacturers of clay products are turning their attention more and more to those appliances that help solve the labor shortage problems. One man eliminated today means a saving of at least $700, a nice little nest egg. But most labor saving devices replace more than one man and besides add greatly to the efficiency of the work done. This is indeed true in regard to the Anderson Brick Conveyor System made by the Marinette Iron Works, Marinette, Wis.

Manufacturers of soft mud brick will find it a very welcome appliance for it reduces the number of wheelers required from three to five men and saves from $9.00 to $15.00 a day. One can easily figure from this what a great saving it will make during one season and the cost of the investment is small. But this is not the only saving and advantage. It eliminates the wheel barrows and runways and the expense of keeping them in repair, and there is no breakage in the operation as on the average soft mud yard of today. This system reduces the cost of the transferring of the brick from machine to the rack and from racks to the kilns and increases greatly the production working in any kind of weather rain or shine carrying the brick smoothly, making turns and delivering from dump table automatically as shown in illustration in their advertisement on page 176, this issue.

INDIANA BRICK PLANT INCREASING CAPACITY—OFFICERS EARN PROMOTION.

The business of the Acme Brick Company at Cayuga, Ind., is steadily increasing to such an extent that the officers have decided to make improvements in the plant that will increase the capacity about 40 per cent. They are now installing an additional unit for the express purpose of making floor tile, putting in a Freese cutter and a Mueller auger machine; building three more tunnels to the steam dryer and will build several new kilns in the future.

The quality of the face brick and floor tile produced by this company is of such high quality that they were able to operate continuously during the war when many clay plants were shut down and now with the return of peace conditions the reputation which they have established is giving them a volume of business which it will tax even the increased capacity of the plant to care for.

At the recent election of officers Douglas F. Stevens was promoted to the office of general manager, in addition to being re-elected secretary; Thomas M. Galbreath, traffic manager, and George R. Johnson superintendent. The other officers of the company are president, Charles N. Stevens; vice-president, V. C. Carlson, and treasurer, Ezra S. Smith.

VERY PROVOKING.

A negro was receiving bricks at the top of a ten-story building where some repair work was going on. Another negro on the ground was loading the brick on the carrier. The negro up above accidentally dropped a brick, hitting the one on the ground squarely on the head.

He was very indignant and yelled to the one above:

"Be a little moah car'ful up thar, nigger. That brick hit me and made me bite mah tongue."

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we again inaugurate a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

QUESTION: What can be done when a coal clinkers bad, to make it easier for the firemen, to remove the clinkers?

Answer: Before starting the fires, throw a few shovels full of sharp sand in each firehole. That will prevent the clinkers from sticking to the bottom and back of the fireholes.

QUESTION: What is the "BEST" material to cover a kiln crown to prevent leaking and losing heat by radiation?

Answer: The most satisfactory material is a cover of hard brick bats, leaving space between the bats. To fill this space use a mixture of: 30 shovels of sharp sand, 20 of ground ordinary clay, and 2 sacks of cement. Turn over this mixture dry, so it gets well mixed, then add water enough to make a thin slush and pour this over the crown, filling in the spaces between the bats. It is useless to cover the top of the bats, it will not stay on, but will rise and soon peel off. The main thing is to fill in the spaces between the bats and it will set and get hard as flint and your crown will never leak and save a lot of heat from loss by radiation.

QUESTION: Why should the lining of a kiln be laid all HEADERS? And why not tied in to the outside wall?

Answer: All headers, because there will be full 9 inches to burn out, while if the lining is laid stretchers with every seventh course as a header, as is the bricklayer's rule, there are only 4½ inches of firebrick to burn out, in six parts of the lining and when repairing becomes necessary, it's a difficult job to place the stretchers so they will stay. Generally the lining must be torn all to pieces and then, a good job is impossible. The lining of a kiln should not be tied in to the outside wall, because, owing to the unequal expansion the wall or the lining would crack. Why? Because the lining gets much hotter in burning a kiln, than the outside wall and the result would be a cracked lining or a cracked outside wall, or both.

QUESTION: What kind of clay is suitable for common brick?

Answer: Most any kind of surface clay that will retain its shape in molding will make building brick. Clay that is sandy is best adapted for soft mud brick and a fat or plastic clay will work better with a stiff mud machine. Shale will both work with a stiff mud machine and also with a dry-press.

QUESTION: How should the clay be prepared for each kind of brick?

Answer: The clay for hand-molded or machine-molded brick must be well tempered so the mass becomes homogeneous, uniform. For hand molding, as is practiced to a great extent in the southern states, the clay is dumped into tempering pits, water is added and a tempering wheel is operated for a couple of hours or until the mass is in the right condition to hold its shape when dumped from the molds on pallets or on the drying ground. These tempering wheels can be operated with horse power or steam and the principle of tempering the clay is this: The wheel runs from the center of the edge of the pit, cutting up every lump of the clay by each revolution of the wheel and this back and forward movement of the wheel is the best device for tempering clay, without stones, of any machine, except the wet pan.

QUESTION: How to temper the clay for stiff mud brick?

Answer: Clay that is free from stones and dry can be reduced in a pulverizer, elevated and run over a screen of 3/16-inch mesh, fed with a clay feeder into a pug mill where sufficient water is added, so the tempered clay will form when coming out of the brick die, a column stiff enough that the brick can be hacked on pallets three to four high or on cars to be transfered to the dryer. Stony clay, if not wet, can best be prepared in a dry-pan with screen plates of 3/16 to ¼-inch mesh, elevated and screened and tempered in the pug mill. Wet clay that is not too wet, so it can be balled with the hands, can be successfully reduced with a steam jacketed pulverizer, elevated, screened and tempered in the pug mill, as stated above. When clay is too wet, it can be partly dried in a rotary clay drier and then pulverized in a pulverizer or in a dry-pan. Or, such wet clay can be fed direct to the pug mill and often tempered to the right consistency without any addition of water. Never feed clay into the brick machine, trying to temper it there. The brick machine is only for expressing through the die the clay that has been properly tempered ahead of the brick machine. You can not make a tempering machine out of the brick machine. Many have tried it and failed.

QUESTION: How is shale best prepared for stiff mud brick?

Answer: Most any shale, except the very soft shale, can be ground in a dry-pan, elevated and screened as outlined before. If, however, the shale is very soft it will work better with a pulverizer, as it would be liable to cake or form sheets over the screen plates of the pan. The same holds true for the preparation for making dry-press brick.

QUESTION: What is the cause of soft mud brick cracking, when laid out on the yard or drying grounds?

Answer: As such brick are generally made during the summer months the sun dries the upper side of the brick more rapidly than the sides and the bottom. There is caused an unequal contraction or shrinkage and the part that dries first consequently cracks.

QUESTION: What is the remedy to overcome this defect?

Answer: Some years ago, when burning sewer pipe and the plant burned down, I was given permission to use some of the kilns and prepared to make hand-molded building brick, during the reconstruction of the plant. The weather was very hot. A negro crew, of one molder, one mud wheeler and three boys as off-bearers, made 9,000 brick per day and after the brick laid out a while nearly every one cracked in two in the center and had to be thrown back in the tempering pit. So it went on for a few days. Then I put my thinking cap on and stopped for a day or two making brick that would crack. I kept on thinking. I was thinking of covering the brick as soon as they were dumped from the molds to the yard with old newspapers, to keep the hot sun off until they stiffened up. No, that would not do, the papers would be blown off, unless weighted down. That was not practicable and be too expensive. I had no drying shed, only the open yard. Then I was thinking of sanding the upper side of the brick and I did, and that stopped the cracking at once. As soon as the off-bearers dumped a mold full of brick, one of my boys sanded the brick, used dry sand and a small round screen. The dry sand absorbed the moisture of the brick, and by the time the sand was dry, the brick were hard without any cracks. The sun heat had lost its power. That was one time when I got along without the sun. I just had no use for it for awhile.

QUESTION: Why do stiff mud brick crack often, either on the open yard or on pallets in the drying sheds or in the steam or waste heat drier?

Answer: Nine times out of ten the cause is, that the clay is too fat, too plastic and an addition of from 5 to 10 per cent. of sharp sand to such clay will remedy the trouble. Other times a drier may be too short and the receiving end is always too hot, but, nevertheless, I will recall an instance where over half of the shale brick on every car in the tunnels cracked and had to be wheeled back to the dry-pan. Then I put my thinking cap on again and I came to the conclusion that the shale was too rich, too plastic. We had a layer of sandstone between the shale and this sandstone was thrown away. Just to make sure, I had a man break some of this sandrock with a heavy hammer and used about 10 per cent. with the shale, starting to mix it in at the dry-pan. We made four tunnels full of these brick with the sand rock in it and not a wheelbarrow load of brick was cracked in the four tunnels. Right then and there the trouble stopped and it also stopped the lamination of the brick.

QUESTION: Why do some dry-press brick crack after being set into the kilns, especially into up-draft kilns?

Answer: They crack when the die plates are too hot. The outside gets too warm and when exposed to the air, thin surface cracks appear. Or, if the clay is too sandy the clay shrinks away from the sand and cracks appear also. Covering the brick from top to bottom at once after they are set with canvas to keep the air off, will mostly stop the trouble.

PROMOTION OF WESTINGHOUSE ELECTRIC OFFICIALS.

The Westinghouse Electric & Manufacturing Company has announced the appointment of a number of promotions among its officials at East Pittsburgh. Among the more important of these are the following:

Alexander Taylor, for many years Manager of Works, has been made Assistant to Vice President in general charge in all plants of production, stocks and stores.

R. L. Wilson has been promoted from position of General Superintendent to Works Manager of the East Pittsburgh Works.

E. R. Norris has been appointed Director of Works Equipment, in charge of machinery, tools and methods in the various plants.

C. B. Auel is made Manager of the Employes Service Department.

Other appointments announced were:

G. M. Eaton has been made Chief Mechanical Engineer of the Company; C. W. Johnson and H. W. Cope, Assistant Directors of Engineering; C. H. Champlain and E. S. McClelland, Assistant Works Managers; John E. Bonham, Assistant to Works Manager; E. S. Brandt, Supervisor of Equipment and Methods.

The following were appointed as Managers of the engineering departments indicated:

A. M. Dudley, Automobile Equipment; R. P. Jackson, Material and Process; F. E. Wynne, Railway Equipment Department, and G. H. Garcelon, Small Motor.

RECENT PATENTS.

[Full details and specifications of the following patents may be had by addressing **The Commissioner of Patents, Washington, D. C.**, and enclosing ten cents for each patent desired. In ordering, give number of patent only.]

No. 1,324,546. Refractory Composition. Enoch T. Ferngren, Washington, D. C., patentee.

A patent granted for a refractory composition which consists of zirconium oxide, calcined magnesite and alumina used in equal parts with a clay flux bond.

No. 1,323,512. Building Brick. Corwin C. Whitacre, Waynesburg, Ohio, patentee. Patent assigned to The Whitacre-Greer Fireproofing Co., Waynesburg, Ohio.

This patent is granted for a brick comprising a continuous bed or body plate having upstanding side and partition ribs forming air channels along each side and in the median portion each brick, there being L-beads on the ribs partially closing the openings of the side channels.

No. 1,323,513. Building Brick. John J. Whitacre, Canton, Ohio, patentee. Patent assigned to The Whitacre-Greer Fireproofing Co., Waynesburg, Ohio.

A patent for a brick which comprises a continuous bed or body plate having upstanding side and partition ribs forming mortar channels along each side and an air channel in the median portion of the brick, and having an upright rib in each mortar channel dividing and partially filling the same.

No. 1,323,514. Brick for Building Purposes. John J. Whitacre, Canton, Ohio, patentee. Patent assigned to The Whitacre-Greer Fireproofing Co., Waynesburg, Ohio.

Patent awarded for a building brick made to comprise a continuous bed or body plate having upstanding side and partition ribs forming air channels along each side and also in the median portion of the brick, with an upright T-rib in each of the side channels partially closing the opening thereof.

No. 1,324,958. Treatment of Clay. William Feldenheimer, London, England, patentee.

A process of cleaning brick and tile clay by suspension and sedimentation which consists in adding a deflocculating reagent to an aqueous suspension of the clay to cause sedimentation of only part of the impurities in the clay, decanting the supernatant suspension away from the sedimented impurities thus obtained, and adding to the decanted suspension a total quantity of a flocculating reagent only sufficient to produce flocculation or coagulation of the clay.

No. 1,325,249. Building Tile Construction. William O. Johnstone, North Tonawanda, N. Y., patentee.

Patent covers a substantially T-shaped hollow building block whose flange and stem are joined by intersecting horizontal and vertical surfaces, the stem being also laterally onset in relation to the flange, said intersecting surfaces being cut away so that when the blocks are set one above another vertical and horizontal air spaces are provided between the blocks, said air spaces breaking the horizontal and vertical mortar joints.

No. 1,325,864. Brick-Handling Machinery. Charles E. Ross, Columbus, Ohio, patentee.

This patent is granted for mechanism in combination with a hoisting truck having an open end portion, a permanent foundation capable of being positioned between said open end portion, a pallet structure carried by said hoisting truck and capable of being transferred from the latter to said foundation, and said pallet structure including a plurality of superimposed, interchangeable L-shaped sections.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.

TRADE WITH the brick and tile manufacturers of Evansville and southern Indiana during the past month has shown considerable improvement over the previous month and indications point to a much busier spring and summer trade than last year. Building operations in Evansville are showing more activity. Most of the building now being done in Evansville is on new factories and additions to factories.

The Scottish Rite Masons recently purchased a lot adjoining their cathedral at the corner of Upper Second and Chestnut streets and plans have been drawn for the erection of a three-story brick addition this year. It is expected that the construction work will start at once. The old homestead of the late Captain John W. Wartmann, at the corner of Upper Second street and Jefferson avenue, is being torn away and a large modern flat building will take its place, the new structure being brick with stone trimmings. The congregation of the First Baptist church has arranged to build a new church building at the corner of Upper Fourth and Cherry streets that will cost in the neighborhood of $100,000. It is expected that the edifice will be completed by late this fall. Several Evansville churches have planned additions for the coming year. It is expected that the large addition to the Deaconess Hospital will be built this year. Plans have been drawn for a large three-story brick warehouse and elevator for the Ohio Valley Seed Company. W. H. Small & Company, wholesale seed dealers, is also contemplating the erection of a new building in Evansville that will represent an investment of nearly one million dollars.

Bricklayers and other mechanics in Evansville are demanding higher wages and the contractors some time ago appointed committees to investigate the scale paid mechanics in other cities of the west and the local scale will be based on the findings of these committees. Evansville is now practically free of labor disturbances and it is the hope of the contractors to keep it this way and it is safe to say that practically all the demands of the men will be met by the contractors.

As stated in the last issue of the Clay-Worker, H. C. Kleymeyer, general manager of the Standard Brick Manufacturing Company, is at the head of a committee to work out a plan for a million dollar housing corporation and while this committee has held a number of meetings definite plans have not yet been worked out for the organization of the company. The housing problem in Evansville has become a most serious one and it is an evident fact that a large number of new dwellings are needed in that city.

With improvements costing between $40,000 and $50,000 the Standard Brick Manufacturing Company is planning a production of over 30,000,000 building and shale brick during the present year. About 175 men are employed on the average during the year at the three plants of the company in Evansville. The improvement work has been distributed among the three plants as follows: At the West Heights plant a caterpillar "tank type" tractor steam shovel, of the latest pattern is employed in digging the shale clay, delivering it in a new crusher which pulverizes the flimsy masses and prepares it for the mixer. The shovel and crusher cost $20,000. Ninety men will be employed at this plant, making 15,000,000 brick, it is planned for this year. The plant of the company on First avenue, making sand moulded soft mud brick, has been improved by a new automatic brick machine that takes the place of the five men working by the older method. The improvement at this plant, including a continuous operation kiln, cost $45,000. Forty-five are employed at capacity production and it is estimated that 8,000,000 brick will be made there this year. A new drier and miner improvements costing $10,000, have been added to the East Side plant's program and production of brick and drain and building tile will be increased to 8,000,000 in 1920. Employment is furnished to thirty men at this plant.

The drain factory at Tennyson, Ind., a few miles east of Evansville, has been purchased by Noah Baker, of North Manchester, Ind. Mr. Baker is a practical tile man, having had twenty years' experience in the manufacturing game. He will take charge of the plant about March 1 and he will make additions and repairs to increase the output. In addition to make drain tile he will manufacture building and block silos. Mr. Baker will move his family to Tennyson within a short time.

The various pottery plants in Evansville are being operated on full time and trade is reported good. The outlook for the present year is regarded as quite flattering.

It has been decided to repeat the Evansville exposition at Bosse Field this year on a larger scale than last year. H. C. Kleymeyer, general manager, and John Andres, secretary and manager of the Standard Brick Manufacturing Company, were members of the general committee on arrangements that managed the exposition last year. The big show brought a large number of visitors to Evansville and it is expected it will be a grand success this year, as more money will be spent in getting the show up this year.

At the annual meeting of the stockholders of the Cannelton Clay Products Company at Cannelton, Ind., held a few days ago, the following officers and directors were re-elected: Lee Rodman, president; M. F. Casper, vice-president; Lee J. Brenner, secretary and treasurer; Henry Heck and J. T. Hay with the above named officers were chosen directors. The report of the business for the past year was most satisfactory to the stockholders and it was announced that the present capacity of the plant is insufficient to meet the constantly increasing orders of the products of the company. It was agreed to increase the capital stock of the company from $30,000 to $50,000 and to issue the additional $20,000 and to guarantee the latter as 100 per cent. preferred stock. The new stock was quickly taken, as it is regarded as a splendid investment.

The revenue derived from the additional stock will be immediately expended in the construction of additional kilns and a railroad switch up to the plant yards. The plant has been judiciously managed by its officers and its general manager, Lee J. Brenner, and before another year rolls by the Cannelton Clay Products plant will be one of the busiest in Cannelton. The fire brick now made by this concern is going out daily to almost every state in the Union and orders are coming in faster than they can be filled. —A. Hoosier.

OPENING FOR BRICK PLANT IN VIRGINIA.

W. F. Baker, of Big Stone Gap, Va., writes there is a fine opening there for a brickmaking plant. Shale and clay abound in endless quantities, the labor conditions are first-class, and it would be an easy matter to interest local capital.

The time has come to put our public schools on a business basis and to incorporate in the teachings more of the real elements and fundamentals of business and industrial life.

[redacted]

OBITUARY.

DEATH OF FRITZ WAGNER.

FOR MANY YEARS Fritz Wagner was associated with the Northwestern Terra Cotta Company and was a conspicuous figure in Chicago's big building operations. A man of infinite jest, he was very popular among architects and other professional men. As a young man he was noted as a singer and story teller and took an active part in club circles, being a life member of the Chicago Press Club, and was a member of a number of other leading clubs, including the "National Union," "The Palette and Chisel" and "Chicago Architectural Club." He has been in poor health for some years past, and succumbed to the final call February 4, at the age of 63. He leaves many monuments to his skill as a clayworker in the great buildings of Chicago and many other cities throughout the country, the fine decorative features of which bear the stamp of his originality. For many years he was a member of the N. B. M. A., the older members of which will remember the beautiful exhibit made by the Northwestern Terra Cotta Company, of which he was then general manager, at the great Chicago Clay Show in 1912. Mr. Wagner was the first president of the National Terra Cotta Society, to which he contributed generously of his time and talents.

The Late Fritz Wagner.

"I cannot say, and I will not say
That he is dead. He is just away!
With a cheery smile, and a wave of the hand,
He has wandered into an unknown land."

Those arguments that men can do as much work in eight hours as in ten have not been proven by production records.

CLAYWORKERS OF THE FAR WEST HOLD CONVENTION.

The Sixth Annual meeting of the Oregon Clayworkers' Association was held at Portland, Oregon, January 21. There was a fine attendance, nearly all of the operating plants of the state being represented. We are indebted to Samuel Geijsbeek, secretary of the association, for an abridged report of the meeting.

T. S. Mann of the Pacific Stoneware Co. of Portland was elected president; C. G. Rawlings of the Albany Brick & Tile Company, Albany, vice-president; Samuel Geijsbeek, secretary and treasurer, and O. K. Edwards of Portland a member of the Board of Directors.

Many questions of particular interest to the clayworkers of Oregon were discussed by the various members. It was reported that the Oregon State Penitentiary had been selling brick on the open market, so it was voted to retain the present Penitentiary committee, and the following resolutions were adopted:

"Whereas, we are reliably informed that brick from the State Penitentiary at Salem have recently been sold on the open market, which we believe is contrary to Oregon laws.

"Resolved, that the sale of brick or any other prison made product which comes in competition with existing factories in the State of Oregon be confined to state institutions."

The committee was further instructed to obtain legal advice in this matter and to carry the matter to early decision, and to assess the members in case of need of further funds. This penitentiary committee consists now of Mr. Mann, chairman, and Messrs. Rawlings and Currie.

Prof. W. L. Powers of the Oregon Drainage Association gave an interesting account of the drainage work done in the state and of the results obtained. He stated that there is some prospects of securing a ditching machine, as hand labor is getting very high, and he hoped such a machine would be soon in operation, and which would increase the use of draintile greatly.

In the general discussion which followed after the program was disposed of it developed that brick was now selling in the Portland market for $16.00 at the yards, and that the cost of delivery was added to this according to distance. Hollow Building block are selling at the rate of $11.00 per ton and draintile is now selling in carload lots at list prices.

The annual dinner was well attended also and was good in every respect. After the dinner some more informal talks were held, and the meeting adjourned with everybody well pleased at the results. No action was taken as to the next meeting, but probably some meeting will be held in July.

PLEASANT REMINDERS.

We are indebted to the George H. Clippert & Brother Brick Co., Detroit, Mich., for an unusual desk blotter, which is well adapted for home use. The top is a celluloid sheet giving the year's calendar by months, and also a six-inch measure. It is both pretty and a useful souvenir.

A pleasant reminder of the enjoyable visit of Sidney Higgins, brick manufacturer of Manchester, England, to The Clay-Worker last year, as chronicled at that time, is in the form of the Dickens calendar. It is both an attractive picture, a woodland scene in which Mr. Pecksniff is a conspicuous figure. The calendar pad is a daily affair, each date slip bearing some interesting quotation from Dickens' works. In a recent letter Mr. Higgins states there is a revival in building in England, and as a consequence the brick business, which is one of the leading industries of Manchester, is again active and prosperous. The Fate machinery, which he purchased while here has been installed and working very satisfactorily.

CORRESPONDENCE.

THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Iowa Brick Man Optimistic.

Editor the Clay-Worker:

Enclosed find check covering subscription to the Clay-Worker for the coming year, and small ad. Business surely looks good. We got caught with six kilns last fall at the time of the coal strike, and have just got coal on the road now to burn them. They are all sold and we wish we had sixty kilns instead of six ready to burn.

Crawfordsville, Iowa. L. H. McFARLAND,
Manager Crawfordsville Brick and Tile Works.

Will Overhaul Plant.

Editor the Clay-Worker:

Enclosed find check to cover subscription to the Clay-Worker, membership in the N. B. M. A., and copy of "Economies in Brickyard Construction and Operation." We are going to give our plant a complete overhauling and expect to get some valuable pointers from this book.

Present indications point to an increase of the brick business in Spokane, and unless brick prices take the airplane route there will be considerable building. Brick are now selling at $14 per thousand at the plant, which is less than is generally quoted in other towns in the United States. We are constantly reminded that we are rubbing elbows with two very wide-awake cement companies and facilities for sand, gravel, crushed rock and cheap lumber were never better than in this vicinity. PETER ERICKSON,

Mead, Wash. President J. T. Davie Brick Company.

Missionary to Africa Wants Brick Machinery.

Editor the Clay-Worker:

I want to thank you for your kindly letter of recent date. As I think I told you, I am a missionary of the Presbyterian Church and have served nine and a half years in Cameroun, West Africa. Up to the present time all of our buildings have been constructed of bark and pit sawn lumber, but a new era is dawning and we have money for new and very much better class of buildings, and inasmuch as I had "served time," as it were, with my father in the general contracting business and later in an architect's office, before going into the mission field, would like to build them of brick. It was with this in view that I wrote you before about wanting brickyard equipment.

We have six mission stations now, and two or three more contemplated, all from forty-eight to seventy-five miles apart with nothing but motor transportation, and that none too good. We have but little sand and no gravel, so concrete is out of the question. There is quite a variety of clays in the country and the government has made a good many brick at their various stations, and we have experimented with brickmaking, with some success, but it takes so much time and costs so much for the black men to make the brick by hand.

I would like to get a machine of 1,000 or 1,200 pounds weight, or even lighter, that could be run with an eight or ten-horse power gas engine. Don't really know whether I want a soft mud or stiff mud wire cut machine.

Lawrence, Mich. H. W. GREIG.

Brick Demand Booming in Montana.

Editor The Clay-Worker:

The discovery of oil in the vicinity of Roundup, Mont. has started quite a boom and more building is contemplated the coming season, than ever before in the history of the "Miracle City."

The Roundup Brick and Tile Company, which had the "Crepe" hung on it during the war has changed hands and expects to start up in full force as soon as spring opens.

Handel Bros., proprietors of the Musselshell Brick Works, which is an open yard plant will operate to full capacity this season.

The Montana Power and Electric Co. is extending its line eastward through the Musselshell Valley, and will install transformers at Lavina, Klein, Republic Coal Co. mine, Roundup, Gage, Brockway. Delphia, Musselshell, Carpenter Creek, and Melstone; brick substations will be built at each of the above places; so you can readily see brick is again coming into its own.

Yours truly,
M. S .STORER.

News From New Orleans.

Editor the Clay-Worker:

The conditions in New Orleans, so far as building construction is concerned, have never looked better. There is at present about seventeen million dollars ($17,000,000) worth of work under construction in the city of New Orleans.

There is in the course of contemplation about $19,000,000 worth of work to start during the present year. This is exclusive of the work being done on our Industrial Canal at New Orleans, which is costing approximately twenty million dollars ($20,000,000).

The brick market in New Orleans remains firm, and the price for brick is about the average price for brick charged in the United States, which is around the $20 price.

There has been no excessive demand for brick as yet. The present capacity of the Salmen Brick Company is about 225,000 brick per day, and we are arranging to eventually double our capacity, so that it does not seem that there will be a chance for a brick shortage in this vicinity. There are also two plants operating in Mississippi, which are shipping brick into New Orleans, and there are plants in Louisiana shipping brick into New Orleans, exclusive of the Salmen Company.

Louisiana at this time is practically undergoing more construction work than any other state in the south, besides its tremendous lumber interests, which are the first in the country, it is coming into its own as an oil producing state.

There is quite a boom on at Shreveport, Louisiana, at this time, and they are asking the brick plants from the vicinity of New Orleans to ship them brick, and they are paying as high as $25 to $30 per thousand for brick, delivered at Shreveport.

The Delta Country in Mississippi is very prosperous at this time, owing to the tremendous crops that we have raised, and there is a good deal of construction work going on in this vicinity.

There is a general feeling among the construction people of the south that the brick people will soon come into their own, as the lumber forests of the south are fast becoming extinct; and in the course of ten years or more, there will be very little lumber produced in this section of the country.

Yours very truly,
F. W. SALMEN,
President.

A BRICK TALK TO LUMBER DEALERS

Excerpts from an address before the Kentucky Retail Lumber Dealers' Association by Theodore A. Randall, Secretary of the National Brick Manufacturers' Association.

BY REQUEST the secretary of the National Brick Manufacturer's Association recently addressed the Lumber Dealers of Kentucky at their annual convention on the importance of closer relation and better co-operation between manufacturers of clay products and the lumber dealers. Mr. Randall said in part:

There has been an evolution during the past decade in the brick business. Formerly, it was a local business—in fact in early years it was a road side industry—brick were made to meet the demand in the immediate locality. I myself can well remember when it was generally conceded that building brick could not be shipped profitably more than twenty to fifty miles, varying according to local conditions.

Rapid transportation changed all this, and naturally large plants were constructed which supply the needs in a much wider area. Brick are now shipped hundreds of miles. That is, common building brick. Face brick are shipped from coast to coast almost. Just recently I was in the office of a face brick manufacturer in Ohio and heard him refuse an order by long distance phone for face brick which were wanted in Seattle, Wash., because he did not have the stock, not because he did not want the order.

With these changed conditions, it seems to me quite clear that dealers in building materials can profitably handle building brick, and I look for an increased volume of business; and in such localities as are not served by a local brick plant, the lumber dealer should naturally be the sales agent in his locality.

That being the case, closer and more friendly relations between the lumber dealer and the brick manufacturers will prove profitable to both and of real service to the local builder. Every man who builds a home builds for the future and not for the immediate present. Ruskin is quoted as saying in this connection,

"Forever: Therefore when we build, let us think that we build forever. Let us not build for present delight, nor for present use. Let us do such work as our descendants will thank us for, and let us think, as we lay brick on brick, that a time is to come when those brick will be held sacred because our hands have touched them, and that men will say as they look upon the labor, and wrought substance of them, 'See this our fathers did for us.'"

A permanent home of brick is a safe home. Our loved ones are comparatively free from danger of conflagration in such a domicile. And with modern brick the home may be made beautiful as well as comfortable and safe. No structural material has been improved more of recent years both in form, texture and color than building brick and no other material lends itself so readily to artistic effects as this world old material. So, in co-operating with the brick manufacturer for the benefit of the local builder you are rendering a distinct helpful service. But some of you may say, this is at the expense of our lumber business. Not so. There is plenty of demand for lumber as an interior finish to supply a ready market for all that should properly be produced.

May I not remark that as the supply of your raw material is being exhausted, it is good business and good policy to conserve what remains by only using lumber where it is most needed. Because of our vast supply of timber we have been a frame building nation. Someone has aptly remarked that we "build to burn," and the excessive fire loss in this country compared with the fire loss in Europe seems to justify the statement. As we grow in wealth as a nation so we should improve in our methods of construction and build for permanence, for safety and for economy. To be brief, the logical answer is "Build With Brick."

Mr. Randall then submitted some statistical data showing the progress of the clay industry of recent years and concluded as follows:

I have mentioned brick chiefly so far. As a matter of fact, there are several other clay products that you can handle advantageously. Indeed you have been handling them in years past. I refer to fire clay flue linings, hearth tile, sewer pipe, fire brick and drain tile which have long been among the side lines of the lumber dealers.

You, the lumber dealers, co-operating with the brick manufacturers and supplying the needed material in your several localities, will render a valuable service. I am a Rotarian, and as most of you know the slogan of that up-to-date organization of business men is "He profits most who serves best." Apply this to your own line of business and I believe you will profit thereby and prove benefactors.

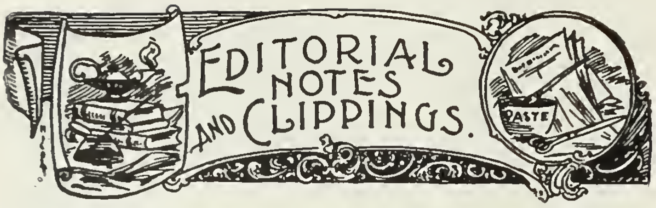
Friendship is an essential to success in modern business. That is why meetings of this sort are helpful. It brings those of a given industry together in a manner that demonstrates the good qualities in contrast with the ill will that sometimes grew out of the old time competition, and made it the death, not the life of trade.

A delegate to a convention recently said to me, "When you meet a fellow in a social way like this, and really get acquainted with him, you find he is a real good fellow, not the 'ornery' cuss you have thought him when you have been in competition and known him by hearsay only. This I think you will all readily admit. So, I bespeak a better acquaintance between you, the lumber dealers, and the brick manufacturers. A closer acquaintance will beget respect, and mayhap a real cordial friendly relation that will increase your earnings and add to the joy of living.

The convention gave Mr. Randall a kindly, attentive hearing and tendered him a vote of thanks with the assurance that the dealers would welcome close business relation with the manufacturers of structural clay products, such as they might handle with profit to themselves and benefit to their customers.

OBSOLESCENSE.

Aside and apart from depreciation charges on equipment to take care of what might be termed the natural wear and tear there enters the matter of machinery and equipment which becomes obsolete before it wears out because something new and so much better is developed that one must of necessity junk the old equipment and put in the new. Some institutions have an account of this kind where they charge off obsolete and replaced equipment, and it is a subject that merits a little special attention right now on the part of many clayworkers. Things are moving rapidly these days,—extra effort is being put forth to develop new machines and equipment, to save labor and to save fuel. As a result many of the older machines, kilns, etc., become obsolete and must be junked or disposed of for whatever they will bring. Some may figure that the new machines and the new equipment will pay for themselves, but it is well also too, when contemplating this gain, to figure out the loss at the other end of the line—that depreciation in value which comes to equipment through being obsolete.



EDITORIAL NOTES AND CLIPPINGS.

The J. L. Guy Lumber & Brick Company will build a brick making plant at Camden, S. C.

The Queen City Shale Brick Co., Cincinnati, Ohio, has increased its capital stock from $50,000 to $75,000.

J. B. Wilson, of Arp, Texas, writes that he contemplates establishing a plant at Arp, Texas, of from 60,000 to 100,000 daily capacity.

The Celite Products Company, New York City, announce the death of Mr. David S. Collins, an associate of that company, which occurred January 15.

The plant of the Kane Brick and Tile Company, at Kane, Pa., which was destroyed by fire some time since, is to be rebuilt at once, at an expenditure of approximately $50,000.

The plant of the Salverson Face Brick Company, of Petersburg, Ill., which was shut down for many weeks on account of the coal shortage, started up again recently and is now running to full capacity.

The Tri-State Brick and Tile Company, of VanWert, Ohio, has been incorporated with $175,000 capital stock. William Klein is secretary-treasurer of the company. A plant will at once be erected for the manufacture of brick, hollow building tile and silo tile.

The Baker Clay Company at Grand Ledge, Mich., has sold its property to L. C. Briggs, general manager of the Briggs company, of Lansing. Additional machinery will be installed in the Grand Ledge plant, bringing the capacity up to 15,000,000 face brick a year or 50,000 tons of building tile.

Negotiations which have been on for some time past taking over the Puritan Brick Company's plant near Hamden, Ohio, have been practically closed and the McArthur Brick Company, of McArthur, Ohio, will take over the plant and continue the business. A number of changes, alterations and improvements will be made.

The Cannelton (Pa.) Clay and Coal Company has leased the old brick plant of the Douglass-Whistler Company, Eastvale, and has put the plant in operation. This plant has changed hands several times during the past few years, but the new owners have installed new machinery and expect to make the plant go. J. M. Cutter, former manager of the Western Union here, is the general superintendent of the new company.

The reports of the officers at the recent annual meeting of the Longmont Brick and Tile Company, of Longmont, Colo., showed that 1919 was one of the best years in the history of the company. The following officers were elected for the coming year: President, A. H. Gunning; vice-president, J. A. VanDeventer; manager, S. W. Gunning; secretary and treasurer, C. A. Gunning. The latter was also elected a director of the company.

At the recent annual meeting of the Purington Paving Brick Company, Galesburgh, Ill., the following officers were elected: President and treasurer, Frank G. Matteson; vice-president, O. N. Custer; secretary, W. H. Terwilliger; assistant secretary, W. W. Porter. Prospects for a prosperous year are excellent at the Purington plant, as many large orders are already on hand.

John Sullivan, manager of the Continental Gasoline and Oil Company, Texarkana, Texas, advises us that his firm will erect a stiff mud brick plant of ten to twenty thousand daily capacity, and would like to receive catalogues and price and equipment for same.

W. K. Eberhardt, of Dale, Ind., is in the market for brick and tile machine for a small plant.

The capital stock of the Gaddis-Harrison Brick Company, of Columbus, Ohio, has been increased from $25,000 to $100,000.

J. C. Curtis, of Denbigh, Va., will erect a brick manufacturing plant with a maximum capacity of 40,000 brick per day.

Vicellio Bros. & White, of Chatham, Va., would like to correspond with manufacturers of brick making machinery and supplies.

The Builders' Products Company, Lake Charles, La., contemplate building a plant for the manufacture of face brick, roofing tile, etc.

The Alberhill Coal and Clay Company, of Los Angeles, Cal., have removed their offices from 706 Equitable Saving Bank Building to 604-608 Pacific Electric Building.

J. F. Donahue, F. C. Fessenden and A. B. Schmidt have incorporated the Whitehall Brick and Tile Company, of Whitehall, Mont. The company is capitalized at $1,000.

The Iliff Brick and Tile Company, of Iliff, Colo., has been organized by Dr. Houf, O. L. Cheairs, W. F. Alexander and others. A plant will be erected in the very near future.

Junius Stone, of Port Newark, N. J., has purchased the plant of the Berkeley Heights Brick Company at New Providence, N. J., and will operate same in connection with his Port Newark plant, which will give him a total capacity of close to 100,000 brick per day.

D. F. Morey, president of the Morey Clay Products Company, Ottumwa, Iowa, died January 30, following a severe surgical operation. The funeral was held from his residence February 1. Mr. Morey had been a member of the N. B. M. A. for many years and will be remembered by many of the members.

L. C. Briggs, of Lansing, Mich., who recently purchased the Baker Clay Company plant at Grand Ledge, Mich., contemplates the organization of a company to be known as the Briggs-Michigan Clay Company. He will start a plant at Durand, Mich., for the manufacture of common brick which he will operate in connection with the face brick plant at Grand Ledge.

The name of the Salina Vitrified Brick and Tile Company, of Salina, Kansas, has been changed to the Salina Brick and Tile Company. At a recent stockholders meeting, the capital stock was increased to $100,000, and the following officers elected: President, J. W. Neptune; vice-president, R. S. Turner; treasurer, F. W. Ekstrand; and secretary and manager, F. C. Hadden.

The Summitville Clay Products Company, of Summitville, Ohio, has been organized to take over the property and business of Summitville Brick Company. The new concern is capitalized at $150,000 and will at once make additions and improvements to the plant that will greatly increase its capacity. G. F. Hammond, of Youngstown, Ohio, is the chief stockholder. A general office will be maintained at Youngstown.

The stockholders of the Ironton Firebrick Company, Ironton, Ohio, held their annual meeting, January 17, and elected the following members of the board of directors: W. W. Marting, E. L. Marting, D. C. Davies, A. R. Johnson, A. C. Steece, E. L. Myers and A. W. Abele. The directors at once organized by the elections of W. W. Marting, president; A. C. Steece, vice-president; E. L. Myers, secretary-treasurer and general manager. The company had a splendid year during 1919 and expect to increase the volume of business considerably during the coming year, the affairs of the company being in excellent shape.

INDIANA BRICK MAN BREAKS HIS LEG.

Douglas F. Stevens, the busy secretary and general manager of the Acme Brick Company, of Cayuga, Ind., slipped on the ice early in January and suffered a broken leg. He is now out on crutches, and says he expects to attend the national convention at Columbus, possibly on four legs, but it takes more than a broken bone to keep him away from an N. B. M. A. convention.

CLEVELAND COMPANY HAS BUSY WINTER.

The R. L. Queisser Brick Company, of Cleveland, Ohio, has made arrangements with the Burton-Townsend Company, of Zanesville, Ohio, to carry their extensive line of face brick, including the new "Rainbow" brick which they are specializing just now. The Quiesser Company in common with other Cleveland brick concerns have had a very busy winter season. They have recently booked a number of good orders for brick for school buildings.

ELECTRICAL PORCELAIN TO BE MADE AT BALTIMORE.

Porcelain products for electrical insulating purposes will be manufactured at Baltimore by the Locke Insulator Company, of Victor, N. Y. This company proposes to build a factory occupying a fifteen-acre site on the water-front, and from $1,000,000 to $1,500,000 will be the expenditure for land, buildings, machinery, etc. A twenty-four-kiln plant employing 700 operatives is proposed. Symington, Hoffman & Company, of Baltimore, have recently purchased the Locke Insulator Company.

PENNSYLVANIA PLANT ELECTS OFFICERS.

Annual meeting of the stockholders of the Yingling-Martin Brick Company was held at Johnsonburg, Pa., in January, and the following officers were elected to serve during the current year: R. G. Yingling, president, Pittsburgh; S. C. Martin, vice-president, Pittsburgh; E. C. Clark, assistant treasurer, Pittsburgh; J. C. Millin, secretary, Ridgeway; W. G. Signor, treasurer and general manager, Johnsonburg. The past year has been an active one for the company and the local plant has done a good volume of business, having worked to their capacity throughout the year. The present year promises to excel even the past year as the demand for their product is up to full capacity, and constantly increasing. Marion W. Blair is plant superintendent.

BRICK PLANT DESTROYED BY FIRE.

The main building of the General Refractories Company plant known as the Eagle works, between Mill Hall and Flemington, Pa., was totally destroyed by fire late in January. The fire broke out in the drying room about 5:30 o'clock, shortly after the men quit work and spread rapidly. The burned building, with the ruined machinery, entails a loss estimated at $75,000, particularly as the plant was rushed with orders for fire brick, which was manufactured exclusively. The plant will be rebuilt as soon as the insurance is adjusted, it is unlikely that operations can be resumed before fall. The kilns, storage sheds and hoisting buildings were undamaged. The plant is one of seventeen owned by the General Refractories Company, of which Governor William C. Sproul is president and J. H. France, of New York, is general manager.

SILICA BRICK COMPANY REORGANIZED.

At a reorganization meeting of the Superior Silica Brick Company, held at Bellefonte, Pa., Charles W. Allbright, of Altoona, was chosen president; Ives L. Harvey, of Bellefonte, vice-president and general manager; Rev. H. S. McClintock, of this city; secretary, and John S. Ginter, of Tyrone, as treasurer. The plant is located at Port Matilda, Pa., and is running to capacity turning out 35,000 brick per day. A number of improvements will be made in the plant with a view of increasing the capacity.

ANNUAL STOCKHOLDERS' MEETING.

The annual meeting of the Hays Run Fire Brick Company, held at the office of the company at Orviston, Pa., was well attended by the stockholders, and the following directors were elected for the ensuing year: Ellis L. Orvis, Charles R. Kurtz and Nelson R. Robb, all of Bellefonte; W. O. Bentley, B. F. Brown and C. W. Keller, of Lock Haven, and John K. Furst, of New Castle. Mr. Robb was chosen to take the place of George R. Thompson, recently deceased, and for many years a director of the company. The directors later in the day met and elected the officers of the company. They are C. W. Keller, president and general manager; Nelson R. Robb, vice-president; W. O. Bentley, secretary and treasurer, and Judge Ellis L. Orvis, chairman of the board of directors.

FIRE CLAY MEN HOLD CONFERENCE.

The regular winter conference of the representatives of the Rutland Fire Clay Company, was held at Rutland, Vt., the first week in the year. The meetings were held at the Bardwell Hotel and were presided over by A. E. Perkins, president of the company. The entire week was given over the reports, which indicated that 1919 was one of the best years the company has ever known, discussion of plans for 1920, and visits to the company plants. In addition to John C. Flynn, manager, and C. A. Perkins, chemist, seventeen salesmen were present, including representatives from eight states, as follows: E. J. Vose, Saratoga Springs, N. Y.; G. H. Woods, Boston; M. L. Beardsley, P. G. Whitcomb and F. A. McCarthy, Rutland; A. H. Cole, Springfield, Mass.; G. S. Kellogg, New York; G. L. Pierce, Boston; C. W. Moulton, Portland, Me.; W. S. McCormick, Trenton, N. J.; H. E. Wombold, Indianapolis; H. G. Bruhl, Ridgefield, N. J.; J. B. Nye, Schenectady, N. Y.; H. J. Murphy, Westbrook, Me.; F. S. Nagle, Wilkes-barre, Pa.; and J. F. Parker, Des Moines, Iowa. The manager of the Chicago office, J. W. Foely, and E. M. Buck, manager of the Northeast, Md., plant, were unable to attend.

HOLLOW TILE MARKET CHANNELS.

The subject of marketing hollow tile was treated of at some length in the Clay-Worker recently in which among other things the retail lumber dealer was pointed to as offering a good channel of trade development. Since that time inquiries among live retailers show an awakening interest to possibilities here. The hollow building tile manufactures have already set up channels for marketing their products in the larger cities, but there is a big field among the smaller cities and towns with wonderful possibilities for development if the manufactures will lay out some well defined channels of trade development and go after the business intelligently and persistently. The hollow tile wall makes favorable appeal, and interest in it is at the point where a little effort at trade development in this broader field should be fruitful of splendid results. To develop it logically, however, the first step is to form up proper connections and lay out trade channels.

Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

Title registered, contents copyrighted.

THIRTY-SEVENTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " "	10.00
Ten copies, " "	15.00

Foreign subscriptions 65 cents additional.

☞Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to

226 East Ohio St. T. A. RANDALL & CO. [Inc.], Indianapolis.

Vol. 73. FEBRUARY, 1920. No. 2.

CURRENT COMMENTS.

Be discovered at Columbus.

* * *

Garner knowledge, and then put it to work for you.

* * *

Burn brick, and then burn more brick, for they will be needed.

* * *

The masses need to be told and retold the story of better homes, brick homes.

* * *

One of the unsolved questions is: Where and how are we going to get enough bricklayers?

* * *

The hollow building tile folks are showing commendable enterprise in the exploitation of their products.

* * *

A good policy to follow is that of doing by hand only those things which cannot be done with mechanical power.

* * *

The scarcity of labor is being relieved somewhat but there should be no letup in the efforts to further develop the use of labor-saving equipment.

* * *

One duty of the clayworking industry during the present year is to more definitely shape its channels of trade and form specific agency and dealer connections.

* * *

It is really the dealers who are demonstrating the advantages of merchandising as an important factor in the brick industry. Moreover, they give promises of not only playing a more important part in the future themselves, but also awaken the manufacture to a better realization of the call for salesmanship.

* * *

There is nothing common about the prices of common brick.

* * *

The great question of the day for the industries is, what are common bricks worth?

* * *

Brick has its big opportunity this year and it is up to the brick men to make the most of it.

* * *

Money spent in building a home is really money invested in citizenship that will pay big returns in the years to come.

* * *

Our flag stands for as much now as it did during the war and those who fail to honor and respect it are undesirables.

* * *

People like to know what a house looks like before they build, therefore pictures and house plans constitute an effective part of advertising of any structural material.

* * *

The paving brick people should come into their own this year too because better streets and street improvements seem to be the order of the day along with the smaller towns as well as the larger cities.

* * *

Cost saving in the clayworking industry centers quite largely on saving fuel or saving labor, because these figures are large items in the cost total, so it should pay to give heed to new ideas and offerings in these lines.

* * *

There will be a good report of the doings at Columbus so that those who could not attend may read of it and learn therefrom, but it is those who attend and take an active part that will get the greatest benefit from the big convention.

* * *

There is a growing realization of the importance in the clayworking industry of the study of ceramics and as a result there should be a large increase in the membership of the American Ceramic Society from the ranks of the brick trade and kindred lines.

* * *

You old boys who twenty-five or more years ago read thrillers about Frank Read, Jr., and his various inventions and adventures, including the flying machine, has the coincidence struck you that it was a man named Read who made the first flight across the Atlantic? If he had only carried an Irishman named Barney, and a darkey named Pomp, it would have been fiction turned to truth, indeed.

GETTING THE GOOD OUT OF CONVENTIONS.

Trade or industrial associations or organizations are conducted for the benefit of their members and the industries as a whole. All benefit some from the work, but for the individual man to get the fullest measure of the benefit from the associations and their conventions there are several things he should do. Among them are, first, he should attend the conventions. Second, he should take an active part in the proceedings and discussions. Third, he should carry home and put into practice new ideas obtained. Fourth, he should strive to keep alive the enthusiasm which is developed during convention sessions.

No man can get the benefit he should out of being an association member unless he attends the convention. Then to get the full benefit out of the convention he should attend the sessions and take part in the discussions. It is through this and the button-hole talks and discussions on the side that men get new ideas for their business and get them whipped into definite form.

New ideas, no matter how good they are, are not useful unless taken home and put into practice. Getting a new idea and being enthusiastic about it at the convention is a step in the right direction, but if you get home and the enthusiasm dies out and the idea is laid aside there is not any material benefit coming from it. Keep the enthusiasm alive, take the worth while ideas home, put them into practice and then when it comes time for the next convention you will be more eager than ever to attend and you will be able to bring new thoughts and fresh enthusiasm to add to and exchange for that of your fellowman.

TAKING THE HOME IDEA HOME.

Now that we have had our campaign of propaganda to develop the home owning spirit why not try taking the idea home? Have you manufacturers of brick and hollow tile made as much effort as you should to encourage home building in your own community and by the men employed in your plant? If you have not it is time to get busy. Take this home building idea home to yourself and to your surroundings and not only seek to develop the home building spirit among those who work for you and with you, but go further and lend a hand to help them realize on the home building idea. Home ownership is just as good for the men who works for you as it is for the other man you have been after. More home building will not only improve the community, but it will add its share to the increased call for building material that should result therefrom. Help those who are with you to build homes, and to build them permanent and fireproof by using brick and hollow tile.

PLAN AND ESTIMATING SERVICE.

When a prospective builder comes to you for suggestions as to plans for a home and for an estimate of the probable cost of a given structure, are you prepared to serve him? If not it is time to get busy and equip yourself to render this service. Contractors who have built in the past have been encouraged to use lumber because the lumbermen have not been ready with tempting pictures and plans for completed homes, but they have also been prepared to render estimates not only as to quantity of lumber, sash and doors and millwork required but also of the total cost of construction. This is a form of service which in the past the lumbermen have made much use of and which the brick men have too commonly neglected. The day is here now for the brick men to equip themselves with plan books, estimates and information with which they can render this same service. This service will do more than any other one thing to encourage a wider use of clay products and to neglect this because it calls for some trouble and expense is to neglect one of the best opportunities of the day.

THE SMALL TOWN DEALER.

The small town dealer in lumber and building material is to be a more important factor in distribution of brick, hollow tile, sewer pipes, drain tile and other clay products in the future. This is said advisedly and notwithstanding that there are many among both the dealers and the clayworkers who do not at present look upon this idea of trade development through small town dealers with much enthusiasm. The near future will see the small town dealers handling more clay products, both in a retail way through their own yards and direct shipments in carload lots than has ever been thought of in the past. The building situation today is such that every prospective builder in seeking to save in cost or to improve his structure at the same cost is carefully investigating and asking about every kind of building material offered from face brick to composition wall boards. Naturally these inquires from the rural districts go first to the small town dealer, and they set him to inquiring and investigating. Indeed there has been enough of this already that the average small town dealer is manifesting a lively interest in every offering of building material and among other things he is investigating the possibility of trade development in clay products. In a word, the small town dealer is a man who should be looked after right now and conferred with because in the aggregate he represents big future trade prospects.

ADVERTISING CLAY PRODUCTS.

In the American Magazine for February the American Face Brick Association starts its campaign of advertising with two-thirds of a page. It is probably not as much of a showing as they desired to make, but it is a good start and speaks well for their efforts.

In the same issue of the same magazine there also appears two advertisements of hollow building tile, one by the Hollow Building Tile Association, and a smaller but well laid out advertisement of the National Fire Proofing Company exploiting Natco Hollow Tile.

There are two interesting features about this. One is that it marks the beginning of widespread exploitation of clay products by organized effort in which there is eventually to be included the advertising of common brick. There have been previous efforts along this line, especially individual effort, and also some good work by the Hollow Building Tile Association, but this seems to be the beginning of general exploitation of clay products and it is a good sign of the right kind of enterprise.

The other interesting feature is a psychological one. The public seems to respond more readily to advertising now than ever before. Illustrative of this a member of the Hollow Building Tile Association, which is advertising in farm papers as well as in magazines, showed the writer an imposing list of replies he had just received in one report. This was more replies than might ordinarily be expected in a campaign running a year, yet they had all come in within the month.

Not only are those pushing the work of exploiting clay products doing a good work, but the present indications are that the returns therefrom will be pleasing and prompt.

BUSINESS STUDIES AND RESEARCH.

In seeking to improve business and business conditions there are two broad lines of study and effort, both the individual and associations organized to help the cause along. One of these is manufacturing, to which is attached the item of cost. The other is selling, which includes the volume of business and selling prices.

It is a somewhat peculiar fact, but experience has proven it a fact just the same, that it is hard to pursue both these broad lines of reasoning and studying at once by the same person or through the same organization. For example, an association that devotes itself to educational work and research for the development of better manufacturing methods will concentrate on these things and will not follow the commercial lines of selling and advertising.

On the other hand, organized efforts either local or national for commerce, for advertising and selling, will not interest manufacturing methods and improvements.

This has proved true of association work and to quite an extent it holds to individual plants and local organizations for better results. Some are qualified and naturally take to the selling end of the business, while others have a talent for developing economics in manufacturing, yet it is seldom that the two lines of efforts can be successfully merged and carried on together. Both are important and should receive attention and in order to give them the attention they should receive it is well to bear this fact in mind and make two distinct divisions in the work. One to develop manufacturing itself or follow actively and consistently ideas pertaining to economy and to look out for costs and cost reduction, the other to develop selling volume and to look into the matter of prices.

THE BOOK OF SMILES.

ON ITS FRONT COVER, "The Book of Smiles" for January and February greets its readers with "Best wishes for 1920, A. D.—Awfully Dry." On the back cover is the following squib, "Seen Al"—"Al who?" "Alcohol." "Kerosene him January 16th and he ain't Bensine since." Between the two, there are many clever sayings, and much information of a serious trend about the flexible system of the Standard dryer. In their ad on page 124, those who attend the N. B. M. A. convention at Columbus are invited to spend some of the half hours between sessions at the Standard headquarters, Room 302. Apropos of New Year's resolutions is the following,

Ten little resolutions standing in a line;
Two weeks passed by and then there were "nein."

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CLAYS AND SHALES IN MINNESOTA.

A special bulletin has been prepared by the U. S. Geological Survey on the clays and shales of Minnesota. This follows a survey of clays and shales made of the state, the results being given in the report. The work was done by Frank F. Grout, author of the report, and by other members of the Minnesota Geological Survey in co-operation with the U. S. Geological Survey. The object of the work done and the report is to determine and inform the public of the supply of brick clay available for every town of 1,000 or more inhabitants in the state and for every county. To ascertain the extent of certain deposits that are now utilized and to find new deposits and to determine the quantity of the clay in definite form and to determine the mixtures so as to find whether it is possible to make from them refractory wares, pottery, paving brick, and other high grade products. A notable feature of the bulletin is a section on the technology of clay by E. K. Soper, describing the methods used in prospecting for clay, location and operation of clay plants, preparation of clay for burning and the kilns and fuels used. The bulletin may be obtained free of charge by applying to the Director of the U. S. Geological Survey, Washington, D. C., and asking for Bulletin No. 678.

Classified Advertisements.

WANTED TO BUY.

Sewer pipe press 42x48 or larger, 20 inch clay cylinder. Box 767 Fort Dodge, Iowa.

2 2 d.

FOR SALE.

Soft mud brick plant, consisting of engine, boiler, Hercules sr. brick machine, Wellington sander, disintegrator, shafting and pulleys and twenty thousand lath pallets. Address Illinois, care Cay-Worker.

2 1 cm.

FOR SALE

One Houston Stanwood and Gamble Steam Engine, 150 horsepower; one Brownell Boiler, 18 feet long, 72 flues, 135 horsepower; both in first class condition. Delivery at once. Address,

1 3 cm BOX 93, Ashland, Ky.

FOR SALE

Well located brickyard in Western Pennsylvania. Capacity 30,000. Owner has other interests is reason for selling.

1 tf dm H. B., care Clay-Worker.

FOR SALE.

At a bargain, Potts brick machine, Wellington sander and Meitz and Weiss 50-h.p. oil engine. All in excellent condition. Address

ZERRENNER BROS.,
12 3 cm New London, Wis.

FOR SALE.

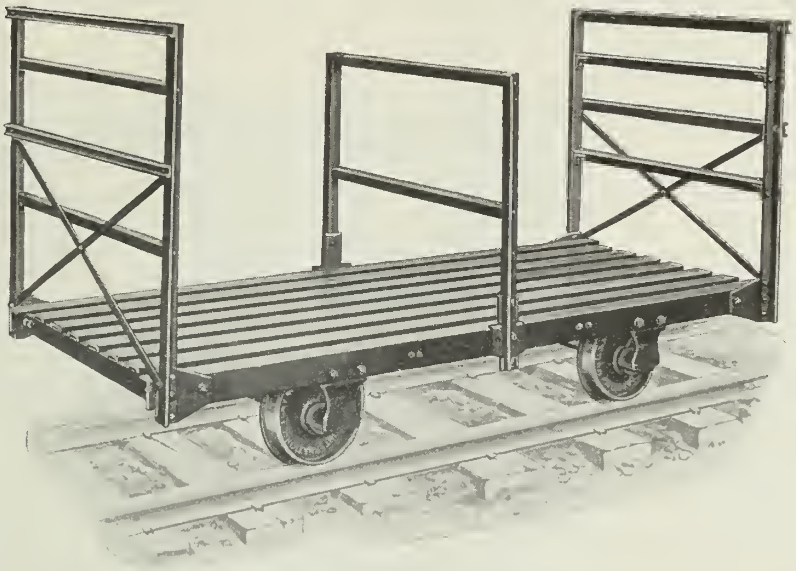
950 pallets for 14-inch to 20-inch tile. Also 1 Bensing cut-off table, practically new.

M. J. SPRANG,
2 1 d Sheldon, Ind.

WHAT IS YOUR TILE BREAKAGE?

Figure Up What It Costs You a Month in Broken Tile or Hollow Ware on Account of Using Cars with Open Ends.

Interest on Rather a Nice Investment—Eh?



An International Style "M" Car

That Isn't All Either—the Rocker Bearing "Makes Your Track Level." Compare International's New Cars with Your Present Ones and Write

See The Furnace Gas Producer At The Convention.

International Clay Machinery Co.

DAYTON, OHIO

Headquarters Convention Week, Rooms 322 and 323 Deshler Hotel, Columbus, Ohio.

Written for The Clay-Worker:

BRICK AND BUILDING NEWS OF CINCINNATI.

AS THE WINTER months are waning the indications in the building field have taken on a more pleasing appearance, and the future gives promise of a better demand as the months move forward. There are some obstacles to be met and overcome, but these are not going to mar the situation to any degree, at least so far as can be noted at this time, and the public is prepared to meet the conditions with a realization that it is not possible to escape them.

Some of these obstacles are higher costs of both materials and labor, and the difficulty of obtaining shipments as quickly as possible. There has been more or less complaint here with regard to the car situation, and the shipments are being held up on this account. This appears to be more serious than the matter of labor, and if there was a better condition in the shipping field, it would be far more easy to care for present and future demands. Costs are almost sure to remain high this year. That is the opinion at least, and one that looks like it will be realized, too.

In so far as the costs are concerned it would appear that the public is not going to make any serious kick. The reports show that at least seventy-five per cent. of the plans that have been figured on in recent weeks have been awarded. As compared with a year ago the situation is very much better. There is a big demand for homes. There is a scarcity of homes, and a number of projects are under way and being planned to meet this condition now. It would appear at this time as though the future looks very promising. However, if the car situation does not become better it may be a difficult matter to obtain the desired materials in time, and this will cause some serious drawbacks that are not going to help matters at all.

There have been a number of large contracts let here in the past month, and this indicates that the building outlook is full of promise. These include some structures that are of more than ordinary magnitude, and other large buildings for the downtown district are being contemplated for the coming months.

George R. Hauser, chief tenement house inspector, has been appointed building commissioner to succeed George E. Rendigs, who retired from that office on February 15. Mr. Hauser has been chief tenement house inspector for three years. Mr. Rendigs will engage in the structural engineering business, in connection with his two former assistants, Rudolph Penzer and James A. Martin, with offices in the new Palace Theater Building.

The Rollman & Son Company, which operate a large department store here, will build a new structure to cost $1,000,000 on its present location at the northwest corner of Fifth and Vine streets. The contract has been awarded to the Reliance Engineering Company, Fourth National Bank Building, who will prepare the plans and superintend the construction of the building.

A new plant to cost $1,000,000 will be erected by the Baldwin Company, manufacturers of pianos, on Gilbert avenue, opposite Eden Park. The plans for the building were prepared by Lockwood, Greene & Company, architects and engineers, Chicago. It will contain about 234,000 square feet of floor space. It is to be of the early Italian Renaissance period, applied to suit modern conditions of lighting, etc. It will be of fireproof construction, with face brick exterior and terra cotta and stone trimmings.

The Hanke Bros. Company, operating a department store on Main, near Twelfth street, will spend about $300,000 in enlarging its warehouse and stores on Main and Huntz streets.

J. M. Wilson is now planning to spend about $350,000 in building a compact apartment house on the south side of Gholson avenue, east of Washington avenue, Avondale. Samuel Hannaford & Sons have prepared the plans for the same. There will be thirty-seven apartments and these will contain some modern ideas. It will be an "L" in shape, the Gholson avenue frontage being 100 feet by 146 feet.

The Cincinnati Brick Club will spend $2,000 in a special display at the "Build'ing Your Own Home Exposition," to be held at Music Hall on March 6 to 13. A creditable display will be made by the club.

The Cincinnati Real Estate and Building Company will build twenty-five homes in the north and eastern part of the city for the market. They will be principally of the semi-bungalow type, and will cost about $150,000.

The Builders' Material Company report that the outlook is for a very fair demand for building materials. There is some difficulty in obtaining materials now on account of the car situation. This appears to be the most serious difficulty now to be faced.

The Cincinnati Clay Products and Manufacturing Company note that January was a very satisfactory month and the outlook for building appears to be very good. Cars have been hard to obtain to ship common brick from the plant at Newton, O., and this has been one of the more serious conditions to be met.

The Evans Builders' Company note that the demands for clay products are better, but complain about the car shortage, which is indeed somewhat serious. Otherwise the situation appears to be some better than it was last month.

The report with the Brick Sales Company is that the indications rather favor a better demand for the new year than was the case a year ago. The difficulty to be able to secure materials is going to be the real trouble.

The Purcell Brick Company say that the outlook for the year is very good, indeed, and no cancellations have been noted at this time.

Building prospects are fair with the F. E. Grand Brick Company, but not as good as they might be on account of the high cost of materials.

Conditions are better with the Queen City Shale Brick Company, and the plant is busy now on making both solid and hollow brick. With the installation of two new kilns which are being prepared for, the capacity of the plant will be increased and the operation much bettered. There has been some difficulty experienced here on account of car shortage for shipping. Cincy.

A BIT OF WISDOM.

A little boy tersely defined temper as follows:

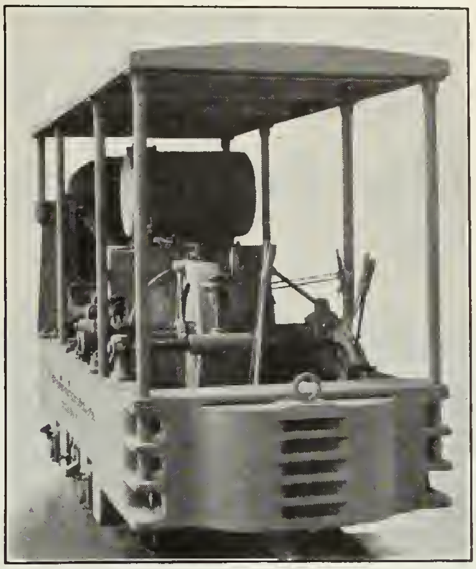
"Temper is something everybody ought to have; only they ought not to let anyone know they have got it."

Is that a better definition than that of the little girl who said "a file is a thing you file with when you want to file anything," or of her sister who defined a river as "a long string of water?"

It is a little difficult to get industrial comparison between the present year and other years because of the difference in basic values today and in previous times. It is well to keep this in mind in tabulating building and other industrial activities because the comparison should be concerned with quality rather than value.

Gasoline and Kerosene Locomotives

Made for any Gauge Track
Sizes from 3 to 12 Tons
Use either Gasoline or Kerosene

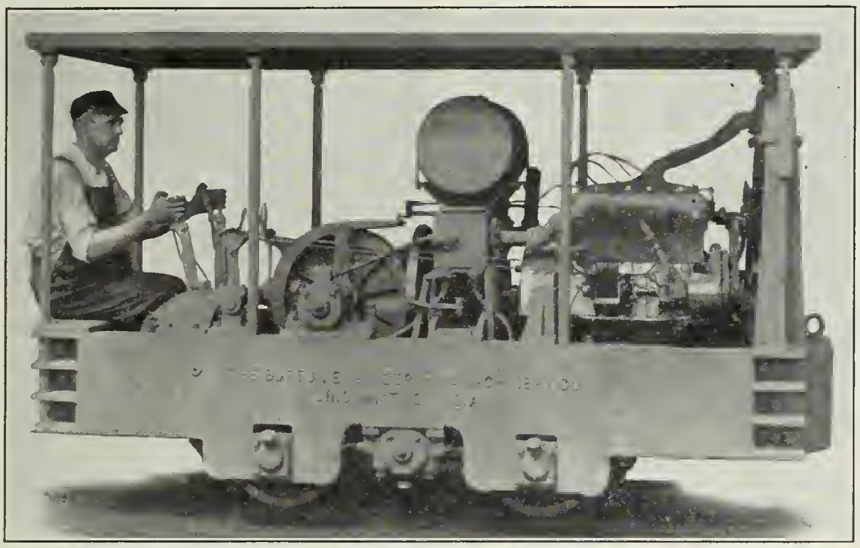


Eliminates:

All complicated parts
All Gears, Differential,
Clutches, Licensed Engineers,
All trouble.

BURTON

Means Economy, Durability, Simplicity



Burton Class "D" 3½-Ton Gasoline Locomotive.

Advantages;

Simplicity in construction and operation.

Any speed, forward or backward, equal power in both directions.

All parts accessible for cleaning and adjusting.

Low cost of up-keep and operation.

Complete Specifications and Prices on Request

A Burton Locomotive will cut Your Haulage Cost 50 per cent.

The Burton Engineering and Machinery Company
CINCINNATI, OHIO, U. S. A.

The S. S. S. Special Automatic Soft Mud Brick Machine

"We manufacture the most complete line of Soft Mud Brick Machinery in the world and can meet the requirements of any size yard, from the smallest to the largest.

Let us quote you on your new machinery.

The Arnold-Creager Co.
New London, Ohio.

Written for The Clay-Worker:

NOTES FROM DIXIE LAND.

DOWN HERE it rained nearly all of December, except the holidays, and most of January, and as a consequence outdoor operations are much retarded. Yet there are goodly number of brick buildings, and some of them large ones, under construction this winter at Memphis. There is much residential and business structure work in prospect for spring, more for the midsummer and other work outlined for fall delivery or to be started about that time. The advances on some lines of materials are causing owners to hesitate, but in the main they are going ahead. The clay, terra cotta, pottery, mining and shipping interests in Tennessee and Kentucky are active, with plenty of orders. Material dealers state that the scarcity of cars and other factors are retarding work somewhat. A number of buildings are being remodeled, ornamentation and sanitary features being the object and incidentally more revenue, of course.

The full report of Building Commissioner Dan Newton for the past year at Memphis shows the aggregate of building to have been $7,518,950. This was an increase of over 500 per cent. of the building in 1918. An analysis of the character of work also shows upward tendencies. Permits for two new hospitals, five new theaters, a packing house and water reservoir, seven warehouses, twenty-one garages valued alone at $46,000, six filling stations valued at $143,000, three churches, one sub-postoffice; 194 buildings and 184 flues were condemned.

Other southern cities showed considerable activity, Atlanta came first with valuations above the $10,000,000 mark. Memphis was second at the figure mentioned. Nashville permits totaled 4 225 with a value of $2,598,659. Chattanooga permits were 2,161, valuation $1,561,488. Knoxville in 1919 issued 1.077 permits with a valuation of $2,283,287.

Albert S. Jacobs, at Crystal Springs, Miss., is developing some fire clay interests on his 300-acre farm near that town. The analysis is said to show a very fine clay.

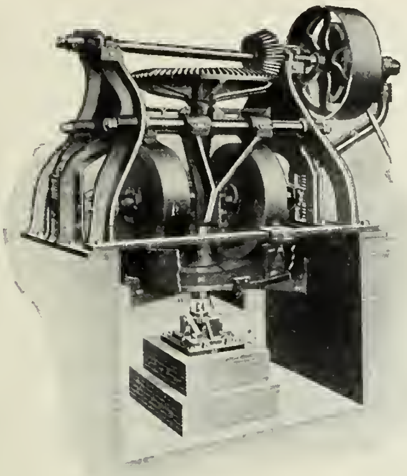
The Corinth Brick Company, at Corinth, Miss., will increase the capacity of its plant this spring and add a six tunnel drying equipment.

C. S. Sparks, at McKenzie, Tenn., is operating his pottery at that point regularly, turning out jugs and jars in large quantities. He utilizes Carroll and Henry County clays.

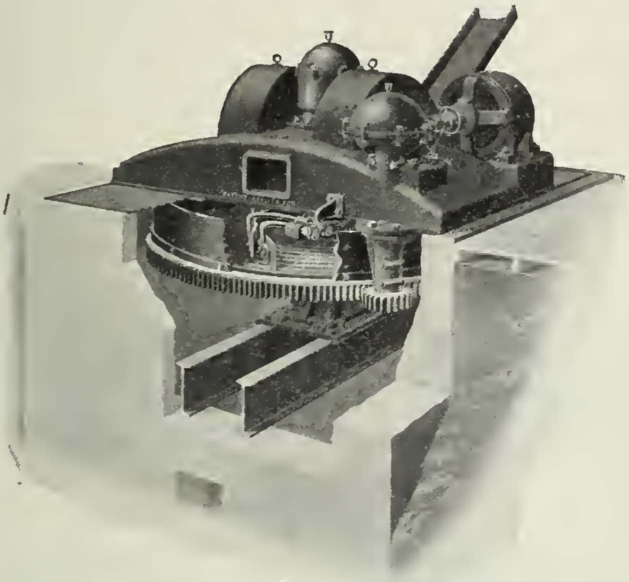
John W. McClish, for many years a prominent brick contractor and builder at Brownsville, Tenn., was inducted into office in January as mayor of that town.

Among the new structures for Memphis in 1920 will be a cotton compress and warehouse on the speedway near Willett street; a twelve story, 400-room hotel on the site of the Arlington by the Tri-State Hotel Company, plans for which are being drawn by Architects Jones and Furbringer; a new building for the Western Union Telegraph Company; several more automobile buildings, additions to several of the city schools, many residences, an addition to the Gartly-Rasey Hospital on Jackson avenue; the completion of the Methodist Hospital on Vance avenue, and the completion of the addition to the Baptist Memorial Hospital on Madison avenue, now under way; the Tuberculosis Hospital, on Lamar pike; a Jewish club house, Poplar boulevard; and numerous business structures, among the latter several new bakeries, ice cream plants, candy factory buildings, etc.

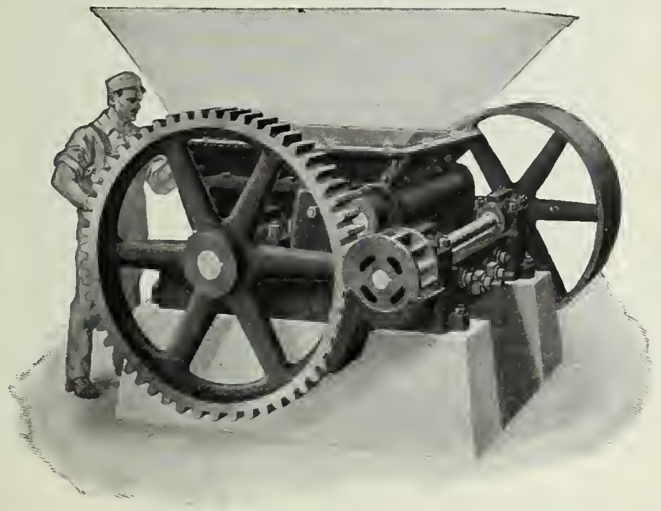
Memphians were delighted recently to get news from Indianapolis of the election of their fellow citizen, E. J. Thomas, Memphis contractor, as vice-president of the Builders' Trades Employers, and equally well pleased at the election of Mr. Lanquish, of Chicago, president; Mr. Donly, of Cleveland; Mr. Gouldand Mr. Bauman to other offices. DIXIE.



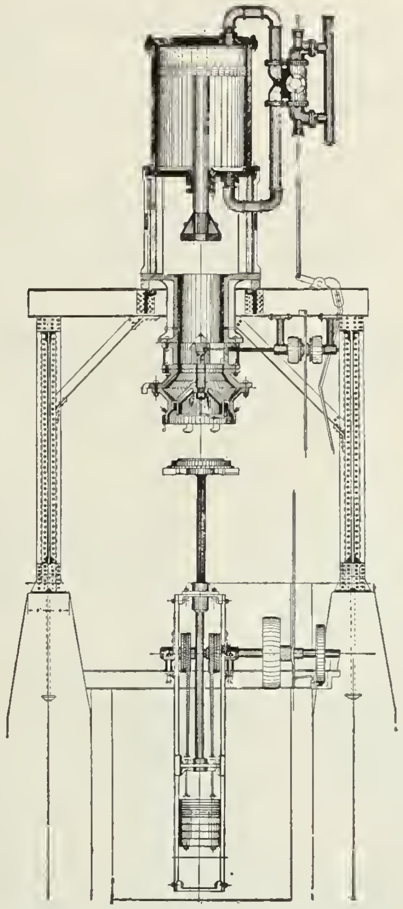
Standard Grinding Pans Made all Sizes



Model A-300 Step Bearing Type Dry and Semi Dry Grinding Pan



Single Roll Crusher



Sewer Pipe Press

Machines for
Crushing,
Grinding,
Pulverizing,
Empounding,
Tempering,
Mixing and for

Elevating and Conveying all kinds of Materials.

Steam Presses for Making Sewer Pipe, Drain Tile, Hollow Block, etc., are Manufactured by

THE STEVENSON CO.,

Gen'l Office and Works **Wellsville, Ohio**

Engineering and Western Sales Office,
Monadnock Bldg., Chicago, Ill.

TRAUTWEIN DRYERS
ARE THE BEST
SUITED TO YOUR PARTICULAR REQUIREMENTS
* * *
Complete Drying Equipment
Consulting Dryer Engineers
TRAUTWEIN DRYER AND ENGINEERING COMPANY
Trautwein DRYERS
608 South
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Chicago, Ill.

WEST VIRGINIA BRICK COMPANY TO BUILD ADDITIONAL PLANT.

The Kenilworth Brick Company, at Kenilworth, just west of Newell, W. Va., will break ground shortly for another brick manufacturing plant, which will cost approximately $100,000, according to announcement made recently by Fred G. Porter, general manager of the plant.

The proposed No. 2 works of the Kenilworth concern, which is one of the largest brick manufacturing companies in the Ohio valley, will be erected on the plot of ground, just east of the old site, and will have a capacity of 1,000,000 bricks per month.

The new plant will be equipped with one of the late models of the American-Dressler tunnel kilns, which, it is said, is equivalent to about ten of the ordinary type of kilns, with a saving of approximately 75 per cent. in fuel.

The main part of the new addition which will house the machinery, will be of brick construction, measuring 40x50 feet, two stories high. The latest type of clay mixing machinery has been ordered for the new plant.

The new tunnel kiln will be approximately 320 feet in length. Brick fired in this kiln can be brought up to the necessary heat and made a finished product from within sixty to seventy-two hours after they are started through the heating process. With the old style of kilns, from ten to twelve days were required to finish the brick after they were moulded while in the green state.

The entire output of the new addition will be a dry pressed brick. Two four-mould brick machines have been ordered for this work.

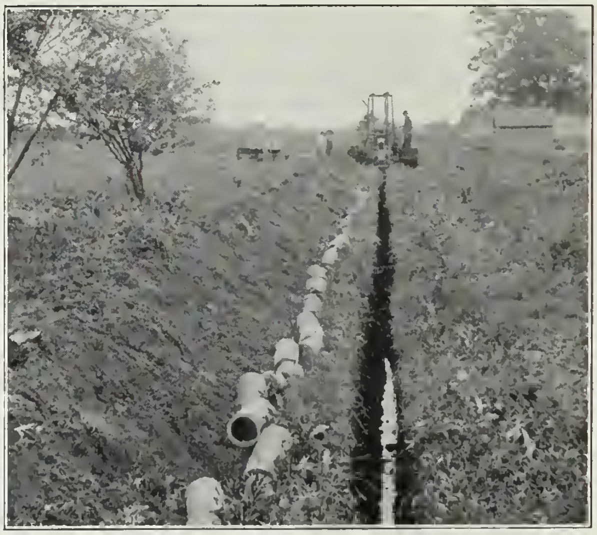
The Kenilworth company will continue to operate its old plant in the manufacture of wire cut brick. The old plant has a capacity of 2,000,000 brick per month when working to full capacity, and nineteen kilns are operated.

DRAIN TILE MANUFACTURERS
Help The Farmer With His Tiling

YOU can sell more tile and have them laid properly, thus assuring absolute satisfaction and at the same time make profits by operating a ditching machine.

WHEREVER there is a tiling machine increased demand for tile is found.

A TILE manufacturer states he makes more profit from his tiling machine than he does from his tile. He owns two plants and operates several Buckeyes. He is going to order another machine soon. He has no trouble getting contracts and uses up more tile than he can produce.



A Perfect Trench at One Cut

THE BUCKEYE TRACTION DITCHER CO
FINDLAY OHIO

ROOM 303

Our Headquarters

Brick Makers Convention

Hotel Deshler Columbus, Ohio

February 16th. to 21st. 1920

Brick Machinery Pipe Rack Dryers

And complete Clay Working Machinery for the production of common building brick by the Original "Martin" Soft Mud Process.

SOFT MUD BRICK MACHINES

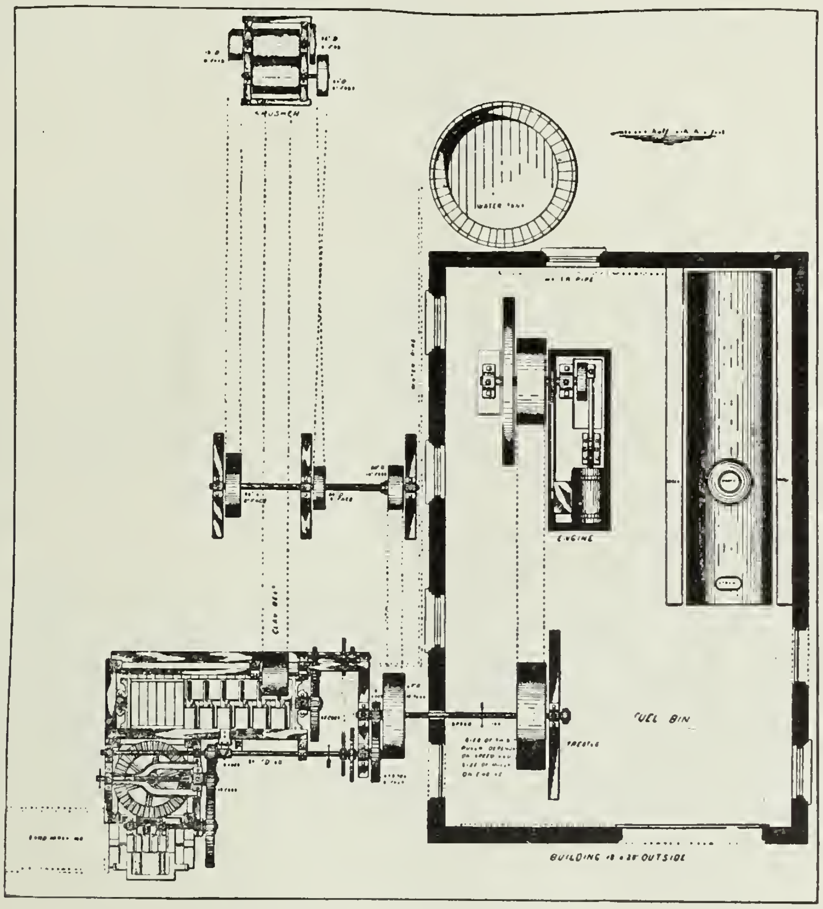
Developed from the original "Martin" design. Heavy and powerful. They will produce 50,000 bricks every working day in the year with minimum labor, power and repairs.

PUG MILLS.

All iron and steel construction. Liberal shafts and bearings. Gears with broad faces and substantial pitch of teeth.

DISINTEGRATORS.

The famous "Parry" design. Originated by a practical brick maker. The most highly developed Disintegrator on the market. Investigate the specifications of this machine, and note the very substantial construction.



The Famous "Martin" 100-A Plan.

PIPE RACK DRYER

Developed from the original "Martin" design. Built of the best materials obtainable for the purpose. The ideal Dryer for economically handling and drying soft-mud brick. Originators of the low pressure vacuum system.

CABLE CONVEYOR SYSTEMS.

For conveying pallets of soft mud brick to Dryers or open air racks. Saves labor. Protects the brick.

CAR SYSTEMS.

For delivering brick from Dryers or racks to kilns with less labor and better handling of the brick than any other system used.

LANCASTER IRON WORKS

Incorporated

Lancaster, Pennsylvania

New York Office,
501 Fifth Avenue

JAS. P. MARTIN, Manager
Clayworking Machinery Dept.

Join the National Brick Manufacturers' Association

Join the Common Brick Manufacturers' Association

THE GALION UNLOADER
"SPEEDS UP" PRODUCTION

Releases all shovelers for more productive work. With this outfit only one man is required to unload a car of coal in 2 to 3 hours. Cuts coal handling cost from 25c to 35c per ton to 4c per ton or less.

The Galion Unloader can be adapted to meet the requirements of practically any clayworking plant.

Write for our Unloader Bulletin.

INDUSTRIAL DIVISION
THE GALION IRON WORKS & MFG. CO.
204 Wyandot Building, Galion, Ohio.

A LABOR SAVING DEVICE

OUR ONE-MAN TRUCK—

the Invincible Truck—should be used on every sewer pipe plant in this country. Saves labor, time and trouble.

Adjustments are made in two minutes for changing to different size boards.

One man can handle 30-in. pipe with case

Positively no load on handles and no triggers on the lift.

TORONTO FOUNDRY & MACHINE CO.
Toronto, Ohio

NOTES FROM TIDEWATER, VIRGINIA.

H. L. AND FRED GARDNER have leased the Franklin, Va., brick plant which has been idle for several years and will put it in operation at once. They have already made extensive improvements and are now running with a capacity of thirty thousand brick per day.

Louis Larson has sold his brick plant at Soroco, near Suffolk, Va., to Adams Brothers & Paynes Company, of Lynchburgh, Va. Mr. J. Ellis Hall, who is interested in the company, is its general manager. This new firm took charge on December 1, 1919. They have the plant in full operation and expect to run it through the winter.

The Virginia Brick Company will install electric motors in their plant this winter and do away with steam power. This plant uses the open air drying system and close down about November 1 until April 1. They will make other improvements to the plant while closed down.

The Elizabeth City, N. C. Brick Company, C. J. Ward, president, will install electric motors in their plant at once and do away with steam power.

The Suffolk Clay Company, H. L. Jacobs, president and general manager, is in full operation with orders booked ahead for ninety days with prices at $18 for merchantable brick and $20 for all hard brick, f. o. b. plant.

R. L. Jacobs, of Suffolk, Va., is looking for a site to install a brick plant.

George P. Coleman, state highway commissioner, has recommended a $70,000,000 bond issue for permanent roads. We expect this bond issue to go through this year. It would be well for the paving brick manufacturers to keep in touch with this movement.

The Glasgow Clay Products Company, Glasgow, Va., have completed several new down draft kilns and increased their capacity of face brick to thirty thousand per day. In a recent letter from them they stated they were sold up for nine weeks on "Va-Tex" rough texture face brick, of which they are turning out thirty thousand per day. Mr. C. H. Locher, president.

J. L. H.

THE BATTLE FOR COAL

Under the stimulus of war needs we produced during 1918, 579,281,000 tons of coal. According to the best estimates something like 18 or 20 per cent of our coal production is consumed for domestic use. This would be something like 11 million tons. The clayworking industry requires almost if not quite a similar amount, and it was thought that with the war ended we were done with the fuel pinch, and have plenty to serve the requirements both for industry and home heating. There was seemingly good logic in this kind of reasoning because we do not have to send coal abroad to any extent comparable with the necessary shipments of foodstuff abroad. We do export considerable coal and the export demand is heavier now than ever before, but at that it will not equal 10 per cent. of the production. One might reason from this that coal should be cheaper and more plentiful. Instead we have a shortage in coal and higher prices to pay than prevailed during the war period. Part of the explanation is found in the scarcity of help, and industrial unrest leading to labor disputes and an unfortunate percentage of mine labor idleness right at the time when the miners should need to be speeding and when the public certainly needs coal. Another part of the answer or explanation of the present situation is in the materially enlarged requirement of coal not only to fill domestic needs, but also to move the wheels of industry. Moreover, if industrial actives move as they should in the next year or two we will need more coal than has ever before been produced. Plainly therefore, coal has come into its own on a higher value basis than we have ever yet figured on. The only way to figure on future needs is that fuel is going to cost more than in prewar days, and that it is going to be more than worth while to acquire those appliances and methods which make for greater efficiency in coal consumption. This applies both to power production and kiln burning, and it has some weight in domestic burning. One of the things which makes all this of particular importance to the clayworking industry is that next to the railroads and the metal using industries the clayworking industry is the largest consumer of coal.

MARCH 12, 1920

THE CLAY-WORKER

THE EXECUTIVE COMMITTEE OF THE N. B. M. A., ON THE SPEAKER'S PLATFORM, CONVENTION HALL, COLUMBUS, OHIO, FEBRUARY 19, 1920—See Page 229.

Published Monthly by
T. A. RANDALL & CO.
INDIANAPOLIS, IND.
OFFICIAL ORGAN OF THE N.B.M.A.

Published monthly. Subscription price, $2.00 per year. Entered as second class matter, January, 1884, at the post office at Indianapolis, under the act of March 3, 1879. Title registered and contents Copyrighted by T. A. Randall & Co., 1919.

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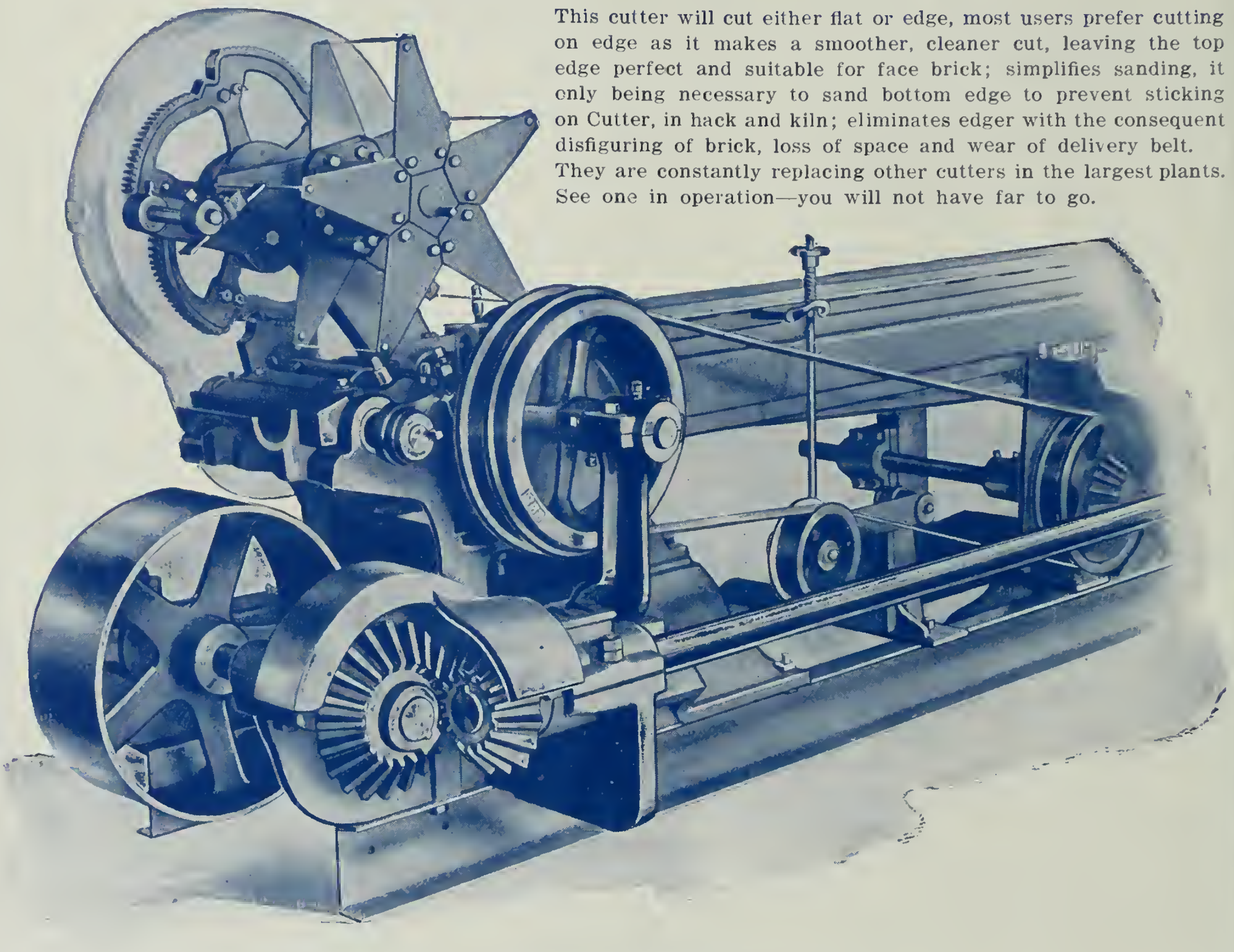
It Pays Well to Be On the Square,

Especially to Cut Your Brick Squarely

This is Exactly What the Steele Cutter Does and Continues to Do.

This cutter will cut either flat or edge, most users prefer cutting on edge as it makes a smoother, cleaner cut, leaving the top edge perfect and suitable for face brick; simplifies sanding, it only being necessary to sand bottom edge to prevent sticking on Cutter, in hack and kiln; eliminates edger with the consequent disfiguring of brick, loss of space and wear of delivery belt. They are constantly replacing other cutters in the largest plants. See one in operation—you will not have far to go.



WHAT THEY SAY

Just a Few of Hundreds of the Same Kind We Have Received

W. E. DUNWODY, V. P., CHEROKEE BRICK CO., Macon, Ga.: "I think yours is the best cutter in existence. That is putting it about as strongly as I know how, and if you know any stronger way to put it, write me, and I will affix my signature."

BIBB BRICK CO., Macon, Ga.: "The two Rotary Automatic End Cutters installed for us about a year ago have given perfect satisfaction, and have not even required adjustment since putting them in. Our bricks are in much better shape than when we used the other cutters, cutting flatwise, the ends are always square, and bricks are not bruised as when we used edger. There is quite a saving in wires, as they do not break so frequently, cutting the narrow way."

SHREVEPORT BRICK & TILE CO., Shreveport, La.: "Your brickmaking outfit with feeder and car system, which we have operated three years has given perfect satisfaction. We really believe your cutter to be the best on the market."

Our Automatic Side Cutters Are Just as Good

J. C. STEELE & SONS **Statesville, No. Carolina**

CLAY WORKING MACHINERY

Western Representative: Geo. H. Smith, 3309 E. 37th. St., Kansas City, Missouri
Northern Agents: The Manufacturers Equipment Co., Dayton, Ohio
Eastern Agents: Carter Engineering Co., 39 Cortlandt St., New York City

THE CLAY-WORKER

THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

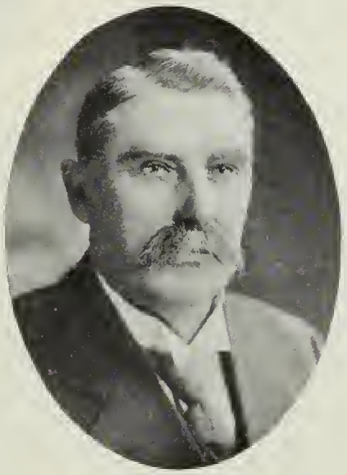
Vol. 73. INDIANAPOLIS, MARCH 12, 1920. No. 3

OFFICIAL REPORT OF THIRTY-FOURTH ANNUAL CONVENTION OF THE NATIONAL BRICK MANUFACTURERS' ASS'N, COLUMBUS, O., FEBRUARY 18-20, 1920.*

"A SPLENDID CONVENTION" was heard on every side during the closing sessions of the National Convention at Columbus. The meetings were well attended and were characterized by enthusiasm and interest on the part of those present, which spells an even wider field of usefulness for the N. B. M. A. and the allied organizations than in years gone by. Those who predicted an attendance of one thousand or more were over sanguine. Doubtless "the wish was father to the thought." Many were kept at home by the "flu" and the unprecedented conditions that prevail in the industry influenced many others, but at that there was a good attendance. The final numerical roster totaled 416, including the ladies, which is a slight increase over the attendance at Pittsburgh the previous year, which, under the circumstances, is a very good showing.

The social features were exceptionally pleasing. The local entertainment committee, under the leadership of Colonel Edward Orton, proved equal to every opportunity, and impressed the visitors so favorably that Columbus will be **synonomous** with good fellowship in the minds of the members. The smokerette was a delightful occasion. There were 350 in attendance. The banquet was up to the high N. B. M. A. standard. General Leonard Wood was unable to be present, but sent a personal representative, Dr. Edwin F. James, of New York City, who shared the oratorical honors with Governor Cox and other speakers, who responded to appropriate toasts. The musical features were exceptional, particularly numbers rendered by twenty girls under the leadership of Miss Lillian Stocklin, who made a tremendous hit, as did Lieut. Arthur McArthur, the soloist of the occasion.

The trip to the University Thursday afternoon was a drawing card, as is evidenced by the photographs on the following pages. The ladies were entertained at theater parties, luncheon, etc. The sessions were well attended and the papers and discussions developed a live interest in the various phases of the industry under consideration, as the following records prove.



President J. W. Robb,
Clinton, Ind.

First Session.

Wednesday, February 18, 1920, 2:30 P. M.

President J. W. Robb: Ladies and gentlemen of the National Brick Manufacturers' Association, please stand while we are led in prayer by Rev. C. F. Chauncey, of Columbus.

The Opening Prayer.

Rev. C. F. Chauncey: Almighty and everlasting God, help us make our Nation the common workshop of our people where everyone will find his place and task, in the daily adventure of building up a resolute manhood. Bind us together by the glow of good will, by the thrill of common joys, and the pride of common possessions. As we face the task of building a world democracy, where justice shall prevail and peace shall be maintained, may we remember that true wealth and greatness must be founded on the dignity of man and the brotherhood of men.

Upon this Association of manufacturers, united on the common platform of the sacredness of work, pour out in abundance Thy spirit. May its officers be men of faith, who will catch a vision of the holiness of industry. May they become leaders of the new age where none shall be master and none man; but where all shall stand side by side in a strong and righteous brotherhood of work. Bless all the members of this association. Make them makers of men as well as manufacturers of goods. Help them to subordinate their profits to the public weal. Give them the steadfast determination to labor more efficiently, more earnestly, more corporate-mindedly. Bind them together by the impelling vision of Him who was the Savior and servant of men; that they may be wise in council, daring in project, righteous in action. Fill them with the consciousness of their sonship to Thee; that they may fear no evil, be discouraged by no failure, that in their occupations they may become prophets of Thy Heavenly Kingdom.

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In this day of great moment, when mankind is faced by grave problems, when a new era is painfully struggling into being, crown them with a devotion to their business, such as inspired Him, who laid down His life for the eternal welfare of the world, Thy Son, our Savior, Jesus Christ. Amen.

President Robb: Ladies and gentlemen, a "Buckeye" by birth and a "Hoosier" by adoption, it gives me great pleasure to introduce to you the Honorable James J. Thomas, the Mayor of Columbus, who will now welcome you to this wet city. (Laughter.)

Welcome to Columbus.

Hon. James J. Thomas: Mr. President, ladies and gentlemen, I esteem it not only a privilege, but an honor to be permitted to come here today to extend to you the greetings of this fair city of ours. In the first place, I might as well tell you I am not a politician, and I know very little about the ways of the politicians. I regret I cannot say I am a Buckeye, like your President, but my parents tell me when I was about six months old I advised them to leave the foreign land where I was born and come to Columbus, where I spent my first birthday. Columbus has been a mighty good home, and I am very proud of this, my home city. My one purpose in serving the people of this city has been that of service. I realize that service to the people is one of the most essential things, so I have one task before me. I have followed in office probably the most popular mayor Columbus ever had. He was mayor for something like sixteen straight years, one of the great leaders of this city, and before this campaign, I never stood upon a platform to say a single word in public, so you can realize what I am up against.

There are some things I would like for you to know. One of the great attractions of Columbus, from the builders' standpoint is that Columbus is a brick city; a great majority of the homes of Columbus are constructed of brick. Columbus has a very small foreign population, and we have very little labor troubles. Columbus has over 2,600 retail stores. We are trying, the citizens of Columbus, to create a model city. There are five things that are essential for the good of a great city. First, is railroad facilities. We are indeed fortunate in that respect, for we have sixteen steam and eleven interurban lines entering Columbus. We have 441 miles of streets within the corporate limits of the city, 328 of them are paved. We need clean streets and that is one of the problems I have to try to solve, but I am not afraid to tackle it. Our street car system, of which we are very proud, covers 140 miles of tracks. The Government has given our water 100 per cent pure test, and inasmuch as water is now used for other than simple bathing purposes, you may realize we are happy in the fact that we have 100 per cent Government tested water.

Columbus has many great problems to solve, and they have solved a great many. It would be worth your while to visit the plant they have built for sewage disposal, the plant for garbage disposal, and their wonderful water purification plant. This city is ready, just like a bud, ready to burst out of its shell. There is a shortage of 5,000 houses at the present time, and with the additional factories that have come here from late fall to the first of March, we will need 8,000 more, and we will have one of the hardest propositions to solve any city ever had to face in housing these people.

I am mighty glad to have the privilege of coming here and extending greetings. You know we have a workhouse that is also built of brick, and I visited that workhouse shortly after my inauguration. Before I went I looked up the pay roll and found we had fifteen employes, and when I got to the workhouse, found they had twenty-one inmates. And last year at the same time they averaged close onto 380, so you can see we don't have much use for a workhouse and we are doing what we can to abolish our city prison. Columbus is getting good, so there is no need for me to stand here, as has been the custom in the past, and extend the freedom of our city, because you cannot get into trouble. No use for me to try to extend to you the key to the cellars, for we have plenty of plumbers in Columbus who can get into the cellars, if they want to, but I do come and extend to you the key to the hearts of the best people you will find any place on God's green earth. I thank you. (Applause.)

Secretary Randall: We were to have received a welcome from the Convention League of Columbus, but we have just received a message from Mr. Bassell's office, saying that he is out of the city, that he expected to be here today, but has been held up somewhere, and will probably speak to us a little later.

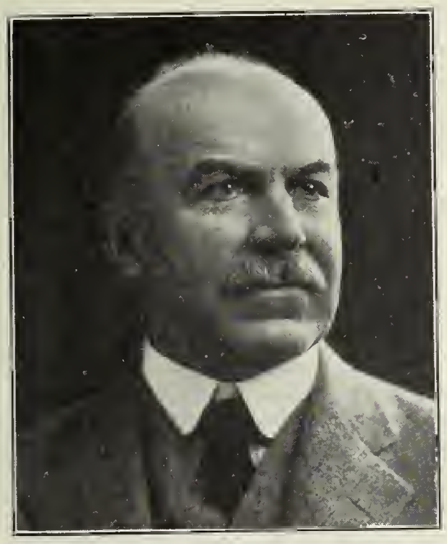
President Robb: I will now call upon Mr. R. G. Eisenhart, of Horseheads, N. Y., to respond to this splendid address of welcome.

Repsonse to Welcome Address.

R. G. Eisenhart: Mr. Chairman, your Honor the Mayor, ladies and gentlemen: On behalf of this association I find it great pleasure to express our hearty thanks to his Honor the Mayor, for extending this cordial welcome. We have been here before, Mr. Mayor, and, therefore, we have learned to know we are not among strangers when we come here to your great city. We knew very well that the royal reception and the hearty welcome we received before would again be given us. We note with a great deal of satisfaction that your city is continuing in a healthy growth, and is prosperous from every point of view, and it is an inspiration to meet in a city like that in convention. There are a great many things that attract us here. One of the things is that you have here one of your prominent citizens, a man who has endeared himself in the hearts of the clayworkers everywhere. He has done more to promote the clay industry than most any other man in this country. I am proud to say that it is the sentiment of every clay man, and for that reason alone, if for no other reason we love to come to the city of Columbus to hold our annual meeting, and that man is no other than Col. Edward Orton. (Applause.)

Mayor J. J. Thomas, Columbus, Ohio.

When this association was started, some thirty-four or five years ago, I was not a member. I have only served thirty years and I regret very much that I could not have started from the very beginning. But where we started, it was all on the go-as-you-please plan, without anything to do but meet together, interchange our views, and tell of our successes and failures and that was about as far as we could go. But there was a time coming when our deliverer arrived, and that was Col. Orton. He showed us the way to the better life and a higher life, and a better way to make brick and other clay products and we give Col. Orton great credit for coming to our rescue.. We raised an amount of money and endowed a scholarship in your great college, the state university and to the State of Ohio belongs the credit of voting an appropriation from the State Legislature to start the first Ceramic School and that was the beginning of our new life. For that reason we love to come to the city of Columbus. We see in this city the making of a great convention city. There are many other reasons I might cite to you for coming here, but I know all mayors are busy men, and haven't much time to fool away with such fellows in the brickmaking line, so I will cut this short, and call your attention to just one thing you have missed, Mr. Mayor, and that is, we have ladies with us I want to say to you without fear of contradiction, that we would certainly fail in this convention work, if we did not have the ladies with us. There was a time when I heard a certain member state on the floor of our convention, that the ladies were our silent partners. Now I concede that they are our partners, but when it comes to the silent part, don't you take too much stock in that. There will not be a store or shop they will not inspect. They not only take an active part on the floor of the convention, but if you will come here tomorrow night and favor us with your presence here at our banquet, you will get evidence that they have done what the U. S. Senate could not do, they have solved the cost of high living. (Applause)



R. G. Eisenhart, Horesheads, N. Y.

President Robb: I am going to take the privilege of varying the program a little. I see Col. Edward Orton is here and I know you will all be glad to hear a word of welcome from him.

Col. Edward Orton's Welcome.

Col. Edward Orton: I did not know that it was a part of my duty as chairman of the local committee, to bid you welcome, but you may rest assured that I do so from the very depths of my heart. My mind goes back to the first convention of the National Brick Manufacturers' Association that this city ever entertained and the real strenuous work we had in arranging to entertain and receive you. It awakens in my mind very pleasurable recollections. I remember that I was forced to the chair as toastmaster at that convention, a serious accident having happened in the family of the victim for that honor. It was necessary for me to assmble hurriedly such feeble attempts at wit as I could and I remember that one of them was to announce to the crowd that I felt myself to be a two year old. Some one in preceding conventions had started the custom of declaring the age of the members limited by the number of these conventions they had attended and I was then a two year old. And I am now so many years old that I don't just like to confess it, but in all the years I have had the pleasure of being with you and working with you in some way, it has been one of the bright spots of the year to be with the National Brick Manufacturers Association. I have always felt that as an association it is somewhat unique. I don't not know another one like it. I have joined a great many associations for one purpose or another over the country, but there is a flavor and personal feeling which seems to exist among the members of this body that other associations don't seem to awaken. You stick together. You have all seen the picture in the last issue of The Clay-Worker of the genealogical tree of the clay industry, the prototype of which is hung on the walls in the secretary's office. The organization which has laid the foundation for all the technical societies, for the study of clay industries of the country is right here, and the fact that this body has maintained its existence, so loosely knit, as it is in a business way, is due to the fact that it is so strongly knit in human comradeship and kindness of feeling It is that fact that has enabled you to live, in spite of this branch and that branch and a division of your personnel in all the various organizations, and I want to say ladies and gentlemen, that a strict continuance of the high ideals which have always maintained in these matters, will witness this association going ahead triumphantly in the years to come no matter how many organizations may be formed of its personnel. (Loud applause)

Secretary Randall: I will relieve the president of the embarrassment of introducing himself by announcing the next number on the program, which is the annual address of our President Mr. J. W. Robb.

PRESIDENTS ANNUAL ADDRESS.

Ladies and Gentlemen and Members of the National Brick Manufacturers' Associations—

It gives me pleasure to meet you on this, our thiry-fourth annual convention, in the Capital City of the "Buckeye State" where we can show honor to our loved and faithful member, Colonel Edward Orton, who we can all number as a friend and whose advice and friendly greeting has been a pleasure to us during all the years that we have been attending the conventions. It is my pleasure to call to your attention some of the objects of the Association, during its long years of usefulness and some of the accomplishments, the speaker thinks it has attained. This Association has fostered the following offspring and we are proud to see them in a flourishing condition:

The Ceramic Society
National Brick Manufacturers' Machinery Association.
National Paving Brick Manufacturers' Association
Face Brick Association
Drain Tile Association

and now the Common Brick Manufacturers holding their first meeting with us this year. To all of these different associations we extend a hearty welcome and offer our congratulations on the success that each one has attained, and we feel very sure that we are coming together to-day in this beautiful city to greet one another with brotherly love and kindness and to extend a helping hand, and any words of advice and encouragement, that we are able to give.

This Association has for its purpose the educational and social side of the brick business, and so far has attempted to keep the financial side of the business out of our convention, leaving that to the kindred associations that have sprung up from the Mother Convention, and we think that these associations are all doing their work successfully and satisfactory to the members.

No association can exist and be aggressive that does not at times run counter to the interests of some of its membership, but we trust that all the members will throw the mantle of charity over these failures or mistakes that creep into the organization and that we may retire from the Convention with a feeling that we have all been benefited and that we will return to our homes with more energy and with the thought of kindness and generosity to our neighbor in his trials, as well as his triumphs, of which we hope the latter will far outnumber the former.

To-day we are encountering some serious questions in the manufacture of our own line, as well as the country is encountering difficulties. The need of production to-day strikes the writer as the greatest need of the country. So far as I am able to learn there is no industry whose demands are not in excess of its supply. If we could work out a partial solving of this one question in this meeting, we would have accomplished great ends. The question of getting increased products for the markets of the world in all vocations is to me the momentous question of the day; whether it can be brought about by increased application to business or work, or whether it will require that we extend the hours of employment to bring the production up to or near the supply of the market and thus allow supply and demand to take care of the markets of the world. Some of this probably can be done by better improved amchinery and methods, or in increased energy in our work. Then again, the question of increasing the hours of labor for a short period of time, to overcome the shortage of supply, should be given some attention. This particular question, I am well aware will not appeal to the laboring element of the country, but we ought all to be of one accord in an attempt to recover ourselves from the past two or three years of the war period.

The high cost of living cannot be reduced, so long as we are climbing a spiral column, and handing to our neighbor, the increased cost of the product that he consumes, by asking for increased wages or profits; there must be a stopping point somewhere, where we will be willing to consider for a period of months, or a year, the problem of supply and demand sufficiently, to get our own bearings, and the bearings of our neighbors, before anything can be accomplished in the way of stopping the continual climb of prices.

One of the questions of the day is, providing homes for the American people, and to provide homes means more capital, more labor and enterprise, and a willingness to lay aside our personal feelings or desires, in regard to the way to accomplish it. But the question of accomplishing it is the thing that should be studied, and the American people have shown by their past record, that they are able and willing to give of their time and of their talents to overcome difficult and serious problems.

The needs for housing of our population at this time certainly is propitious for the brick business and there should be a demand for every brick that can be produced during the season of 1920, and at fair prices. There are two or three serious things to be considered in this; the increase of product and the market. The lock-out and strikes each are chargeable with some loss of production and both of these things are a menace to our country and are really crimes against society, which we should seek to overcome by reasonable means of conciliation.

During the past strenuous two years, we all gave of our time and our talent, worked over-hours in attempting to provide for the boys that were going over the top, who carried a wrist-watch to tell whether it was to-day or tomorrow, and, I think America did herself proud in that task, but that feat has been accomplished, and, as an American citizen, I am willing to claim that we are the nation, who brought victory to the allied countries in so short a time after our men became engaged in the struggle.

This Association was the first to make it possible to have technical tests of clays made for the betterment of the industries, and, has accomplished great good for the membership, first, through the efforts of our honored member, Professor Orton; then later through Professor Bleininger, who is to-day connected with the Bureau of Standards of the United States Government. As you all know, this Association co-operates with Committee C-3 of the American Society for Testing Materials, and through the efforts and the co-operation of the two associations, much has been accomplished for the craft.

The statistical and financial conditions of the Association will be dealt with by the Secretary and Treasurer's reports, statements of which will be submitted to you following this paper.

At the last annual meeting, a Committee of Membership was authorized, and the writer proceeded to appoint that Committee, consisting of the following members:

W. D. Richardson, Columbus, Ohio, Chairman,
Lemon Parker, St. Louis, Mo.,
J. W. McMillan, Milledgeville, Ga.,
Geo. W. Keller, Philadelphia, Pa.,
John C. Boss, Elkhart, Ind.,
Wallace M. Tuttle, Middletown, Conn.,
H. J. Jova, Newburgh, Y. Y.

Mr. W. D. Richardson declined to serve as Chairman and our mutual friend Mr. Burton agreed to accept that honor. Each Vice-President in all the states was asked to assist in this membership campaign by the writer, but the appeal seemed to not have been heeded by the majority of them. The Secretary's report will no doubt show what has been accomplished by this Committee. However, he advises me that it has not been very successful, of which I am truly sorry, but have no disposition to criticise or complain of any of the members, as I realize that we are all busy men these days and that each man's business appeals to him first before that of the Associations, even though he be imbued with a desire, to further the interest of the Association.

I desire to thank the Membership of the Association for the honor conferred upon me by electing me to the office of President of the Association, which is one that I feel has been an honor to me, and has been pleasant during the year's labors. I thank all the officers and members of the Executive Committee for their support during the time and will retire from the position with the kindest feelings toward all of the membership and trust that I may be able to meet them in a number of their annual conventions in the future. (Applause)

President Robb: The next number on the program is the report of our treasurer Mr. John W. Sibley.

Secretary Randall: Mr. President, ladies and gentlemen; it is indeed regrettable that we have to announce today the unavoidable absence of our treasurer who met with the loss of his life partner last week and is himself now confined to his bed. Were he here I am sure he would provide the usual darky story which you all seem to enjoy. I heard a story the other day and while I cannot tell it with Brother Sibley's

DELEGATES AND GUESTS GROUPED IN FRONT OF ENTRANCE TO dialect, I will venture to tell the story for him of the little colored boy who went to school for the first time, and when the teacher asked him his name and he said, "My name is Serene Johnson." The teacher said, "What's that?" and the lad repeated "Serene Johnson." The teacher said, "that is the queerest name I ever heard, what do you mean by it?" and the boy said, "Why you know, teacher, that when the sky is blue and everything am calm and serene, why that's me." (Laughter), and that is the way things usually are with Treasurer Sibley. When John is with us, we feel the sun is shining and everything is calm and serene. I have his report which I will submit for him.

Receipts.

Balance on hand, 1918		$ 565.10
Renewal fees, account 1919	$1,880.00	
New memberships, account 1919	340.00	
Sale of books, etc.	7.00	
Refund from Committee on Technical Investigation	73.91	
Total income		2,300.91
		$2,866.01

Disbursements.

Paid for Convention Program, Mailing, etc.	$ 153.00	
Paid for Convention Report, Mailing, etc.	355.17	
Paid for Membership Amer. Test Society	15.00	
Paid for Membership U. S. Chamber Commerce	15.00	
Paid for Postage, telegram, expressage, etc.	193.00	
Paid for Lantern Slides, etc.	115.70	
Paid for Rosters	94.57	
Paid for Miscellaneous Printing	245.56	
Paid for Incidental Expenses	82.50	
Paid for Clerk Hire	300.00	
Paid for Secretary's Annual Allowance	600.00	
Paid for Asst. Sec'y's Annual Allowance	200.00	
Total disbursements		$2,369.50
Balance in Treasury		$ 496.51

Recapitulation.

Balance in Treasury, Account 1918		$ 565.10
Total Receipts, 1919	$2,300.91	
Total Disbursements, 1919	2,369.50	
Excess of Expenses over Receipts		68.59
Leaving Net Balance in Treasury		$ 496.51

To the Officers and Members of the National Brick Manufacturers' Association:

Gentlemen:—I beg to hand you herewith report of receipts and disbursements for the year just ended. I had anticipated making this report in person, but my beloved wife suffered a second stroke of apoplexy on the 6th inst., and as I write this, is unconscious and in a critical condition. Truly "man proposes and God disposes," and I must abide His holy will.

I know how deep will be your sympathy for me, for among my most highly prized treasures are the lasting and tender friendships that have come into my life as a member of the N. B. M. A.

But out of the darkness of the hour to me I sincerely wish that this may be a most successful and enjoyable convention and thank you for the many acts of gracious kindness to me in the passing years.

Respectfully submitted,
JOHN C. SIBLEY,
Treasurer of N. B. M. A.

Secretary Randall: Mrs. Sibley died a few day following the writing of this letter. She was for many years an attendant at our conventions and her sunny disposition and happy ways had made her a great favorite among our ladies.

President Robb: What is the pleasure of the association in regard to the treasurer's report?

Mr. Eisenhart: I move it be accepted as read.

Wm. Hammerschmidt, Lombard, Ill.: I second the motion. Carried.

J. Fred Simth, Omaha: Mr. President, it was my pleasure to be in Birmingham this last week. I heard of the death of Mrs. Sibley, so before I left I telephoned to his home. I asked for Mr. Sibley and was told he could not talk to me, that he was in bed, but he would be very glad to see me if I would come out. Of course I went out to the house and I never saw a man so glad in my life to see another brick man as he was to see me. He sent this message to the convention. "I have a lot of good friends in the National Brick Manufacturers' Association, give them all my love and say I am very sorry but I cannot meet with them this time. (Applause)

Chas. H. Bryan, Detroit: I move Mr. President that we send Mr. Sibley a telegram of condolence and sympathy and wish for him a speedy recovery.

John T. Hummert, Quincy, Ills. Second the motion.

Carried.

President Robb: I will appoint Mr. Bryan a committee to look after the sending of this telegram. The next in order is the Secretary's report.

Report of Secretary.

Secretary Randall: As you all know, the secretary has not been in the habit of making a report as the printed proceedings really show the work of the secretary, but last year the executive committee thought I should make a formal report and this year President Robb insisted the custom should be followed. I think he wanted to catch even with me

THE CERAMIC DEPARTMENT, LORD HALL, OHIO STATE UNIVERSITY for putting him on the program for an annual address. My report is not as serene as the little colored boy's name, perhaps, still it is not at all discouraging. To be sure our membership campaign did not materialize, but there are reasons for that other than a disposition on the part of the members to push the proposition. The times were not propitious for a move of that sort, but I believe that we may hope for better things the coming year. Just recently I mailed out a letter for one of our members to some personal friends of his in the trade calling their attention to the coming convention and asking them to become members. From that one little letter, we have added five new members to our list. We are going to follow that up and I am going to ask every member to help me along that line. I think that in from three to six months, with proper effort we can double the membership of our association. Anyhow, we will try. I mailed two thousand of our programs to the leading clayworkers of the country so the craft know we are having a convention and they, the stay-at homes are the losers. When asked how many would be in attendance at this convention I said we ought to have a couple hundred more than we had at Pittsburgh. I thought there were many things that needed to be considered that would bring an increased number here this week. The meeting of the Common Brick Association should have added a couple hundred or more to our usual attendance and some of the more enthusiastic ones said we would have more than a thousand in attendance. A little paragraph in the current Book of Smiles illustrates the idea.

A Good Story.

Senator Medill McCormick, of Illinois, used to tell some fine fish stories. But his friends claim they have him stopped with this one. It seems that he and an old guide used to come in with fish of unusual weight, according to their stories, and McCormick always dwelt on them at length when he got back home. So one of his friends went along last fall to help enjoy the big fishing. Things went fine until one day the guide with much pride told them of a baby boy born at his house the night before, and they all went up to see him. The proud parent showed the baby from all angles, but confessed he hadn't weighed him. So they got out the scales. They were the ones he used to weigh fish and—McCormick denies it—that one-day old boy weighed 96 pounds.

If we weighed the attendance with the scales we had in mind, we would have had a thousand people, we have by actual count in this room nearly two hundred and we have registered over three hundred and we hope to reach the four hundred mark, before we are through tomorrow, so our attendance can be considered as averaging up to that of recent years. I am going to say a little more to you along this line in connection with our first paper of the afternoon, so I am to beg your indulgence a little longer and pass on to the next in order which is the report of the Committee on Technical Investigation by Dr. Albert V. Bleininger.

REPORT OF COMMITTEE ON TECHNICAL INVESTIGATION

Mr. President and Gentlemen of the Convention:

The Committee has not been active during the past year owing to the fact that sufficient funds for conducting research work have not been available. The cost of carrying on technical investigations has increased like everything else. While for years the amount of $250.00 per annum has sufficed to secure one-half the time of an assistant at the Ohio State University, this is utterly impossible now since such service cannot be secured for anything like this amount and the cost of apparatus and supplies has increased in proportion.

The report of Colonel Edward Orton on the sodium sulphate test applied to brick which has been explained to the convention last year by Mr. E. Ogden, has been printed by the American Society for Testing Materials as part of the report of Committee C-3. The principal facts brought out and conclusions reached are as follows:

Summary.

Concerning the value of the A. S. T. M. tentative tests and the proposed sodium-sulphate tests, after giving due consideration to the light shed upon each test by the other, and upon both tests by the actual freezing, the following statements seem warranted:

1. But one group of all tested falls into the vitrified class. These were well-made soft-mud brick of exceptional strength. No broad statement can be made from the study of one group, but we believe that the A. S. T. M. test will be reliable for vitrified brick.

2. The A. S. T. M. tests are thoroughly reliable for selecting hard brick.

3. The A. S. T. M. tests are reliable in most cases in selecting or classifying medium bricks that will endure exposure in exterior walls. There are, however, exceptional cases where they are not rigorous enough. For example: underburned shale brick; underburned soft brick or such structure that it will withstand considerable compressive and transverse strains, but will not withstand those peculiar disruptive forces set up by freezing; bricks containing large lumps of foreign material of radically different properties from burned clays. In this case the foreign material consists of flint pebbles; the bond between such material and the clay matrix is weakened by freezing and causes failure, although it may have enough initial strength to pass the compressive and transverse requirements.

4. The thoroughness with which the A. S. T. M. tests select

THOSE WHO PARTICIPATED IN THE AUTOMOBILE TRIP TO THE SCHOOL the soft bricks, that is, bricks unsuitable for exterior work, is commendable indeed. If it errs at all it is on the safe side. An occasional exception is found. These tests seek out weaknesses due to presence of soft foreign material, such as lime, and weaknesses due to cracks and checks, with equal readiness.

5. We believe that the limits of absorption, compressive, and transverse strength assigned to each class are well chosen, and no suggestions for changes are offered.

6. The sodium-sulphate test is a useful and reliable test. It is easy to keep all conditions of the test within limits that will ensure very small variations of concentration of the salt solution. It requires but a short time, eight days for four treatments, and the equipment needed is such that it can be obtained almost anywhere. In applying this test to thirty-seven groups of brick there are but two instances where its verdict may be said to be grossly misleading: both containing large quantities of lime and both of high absorption.

As a safeguard against the inability of this test to equal actual freezing in those particular cases where the bricks contain large quantities of lime, and where the disrupting forces are due largely to complete hydration of the lime, it is recommended that the four sodium-sulphate treatments be supplemented by five hours boiling in water, after the fourth treatment. This will give any unslaked lime an opportunity to slake and exert its disruptive forces upon the burned clay matrix that has already been pretty thoroughly tested by the sodium-sulphate treatment. We believe that with this precaution this test can be depended upon to classify building bricks, into those which will endure exposure to freezing, and those that will not.

7. We believe that if a sample of bricks will pass the sodium-sulphate test herein recommended, and is within the limits of absorption set by the A. S. T. M. standard for vitrified brick, it is safe to classify them as vitrified brick without knowledge of their compressive and transverse strengths.

8. We believe that a sample of brick which will pass the sodium-sulphate test and lie within the absorption limits set by the A. S. T. M. standards for medium brick, may be safely classed as medium brick, without knowledge of their compressive and transverse strengths.

9. The facts seem also to warrant the statement that if a sample of brick fails by the sodium-sulphate test, it may safely be classed as soft brick without knowledge of its compressive and transverse strengths, and regardless of its absorption, unless that absorption is lower than the limits set for soft brick by the A. S. T. M. standards.

10. Emphasis must be given to the absolute necessity of carrying out the sodium-sulphate test in the manner described above, for a considerable variation in the severity of the successive treatmenets by any one operator or in the tests made by the different operators is liable to result from a change in the method of using the solution. The crystallization must take place rapidly and in an oven at temperatures between 110 and 120 degrees C to insure the formation of the anhydrous sodium-sulphate crystal. If crystallization is allowed to take place slowly at room temperature, the decahydrate sodium-sulphate crystal, $Na_2SO_4 . 10H_2O$ will be formed. This salt has a much larger volume than the anhydrous crystal and hence exerts a much more severe force upon the structure of the sample. For this reason it is essential that each treatment be followed promptly by the next treatment in order not to allow time for the formation of the hydrous salt, as such action will vitiate the test. This is demonstrated by the fact that several of our samples disintegrated due to the formation of this crystal, upon being allowed to stand in the open in the work room, after successfully passing the five sodium-sulphate treatments as described.

11. The facts brought out in the last paragraph will explain why some persons who have attempted to apply this test without the use of an oven have found it variable and too severe.

12. The objection offered by some that the sodium-sulphate test is more severe than actual freezing is admitted to be true, for we have found that in most cases four sodium-sulphate treatments are more than equivalent to twenty-five actual freezings. The fact is worthy of emphasis, however, that a factor of safety is allowed in practically all other structural materials such as steel, wood and concrete, and that it is equally desirable in brick. If a brick will pass the sodium-sulphate test herein prescribed and is not so full of lime pebbles that it deserves rejection by visual inspection, we may be reasonably certain that it will give good service in an exterior wall exposed to repeated freezings. We therefore commend this test to the consideration of Committee C-3.

Conclusions.

1. It is recommended that the specifications for the testing of building bricks be amended to include the sodium-sulphate test or the ice-freezing test, or both. The former should be carried out substantially as described in this paper.

2. It is recommended that the specifications for the basis of classification of building bricks be based principally upon the standing of the bricks in absorption and sodium-sulphate test (four treatments). The following classification of building bricks into four grades is suggested:

Name of Grade	Absorption Limits per cent Mean of 5 tests	Individual maximum	Sodium-Sulphate Test (Four treatments)
Vitrified brick	5 or less	6	Grading A only.
Hard Brick	5 — 12	15	Grading A with none lower than B, and not more than two of that grade in five bricks.
Medium Brick	12 — 20	24	Grading A or B with none lower than C, and not more than two in that grade in five.
Soft Brick	Above 20	No limit	Unable to stand C or better.

Any sample unable to meet both tests falls automatically to that grade to which its worse report consigns it.

If, for instance, a sample lot of five bricks showing 8 per cent

FOR CLAYWORKERS AT COLUMBUS, OHIO, FEBRUARY 19, 1920 absorption is graded two C and three B by the sodium-sulphate test, it would be classified as "medium." If a sample lot showed 14 per cent absorption and a sulphate test report of two C and three D, it would rank as "soft." If the lot showed 22 per cent average absorption and still passed the sulphate test with five A, it would remain "soft" on account of the high absorption.

3. The results of the compression or modulus-of-rupture tests should not disqualify a brick from its rating as determined under paragraph 2. In fact, it might be feasible to dispense with the mechanical test entirely.

4. Rejection on visual inspection on account of coarse pebbles or marked irregularity of structure may be applied to bricks of the three better grades. Marked inhomogeneity in bricks otherwise graded as "soft" shall not disqualify for use in that grade.

Further Recommendations.

This technical activity of your Association we consider very important and it is to be hoped that measures can be taken to insure adequate financial support for its continuance. It would be exceedingly appropriate if the several branch organizations which have been formed from the parent Association would join in this work and contribute their share towards the creation of a larger fund for conducting fundamental researches equally important to all who produce structural materials from clay. There are plenty of subjects having general significance which could be agreed upon by the representatives of the different branches and which could well be studied to advantage under the auspices of this Association and its technical committee. The organization is available and is waiting to be utilized. Such co-operation would tend to unite the different interests, on common ground, would make possible larger projects of study and more frequent contributions and need not interfere with the special work and problems of each branch of the industry. Such a project, supported by the united strength of all the structural clay products branches could be put on a higher plane and would reflect real credit upon the clay industries. It cannot be expected that this Association, singlehanded and without adequate support, can do the vast and important work in which all should join.

A. V. Bleininger, Pittsburgh, Pa.

I beg leave to submit for your consideration a general problem of importance to all, the subject of burning. It would seem that a comprehensive survey should be made of the entire field, involving the economic use of fuel, kiln construction and the firing process itself. It should be the object of such a report to consider present conditions, the economics which are possible with the periodic kiln and the kiln systems which are most promising for the future expansion of the industry. We are still in ignorance concerning a number of the fundamental questions involved, such as the actual amount of heat required in firing clay, heat transmission, heat losses, and the maximum speed at which clay products can be heated without injury. These are vital problems which are worthy of being considered on a scale commensurate with their importance. While some work along these lines has already been done and some is under way at the present time, what is needed now is, first, to collect this information making it available to the manufacturers; second, to secure the data and facts still lacking, and third, to combine the whole into a comprehensive report which would serve as a guide and text book to all interested in this subject.

It is realized that the task outlined is a large one, requiring the expenditure of considerable effort, skill and money, but it is believed that it is worth while and of benefit to all. Unless, however, adequate means can be found to support this investigation it had better not be attempted, and it would be better to confine our attention to problems of smaller scope.

Very respectfully,
A. V. BLEININGER,
Secretary.

GENERAL DISCUSSION.

Will P. Blair, Cleveland: I do not know whether this report is to be discussed at this time or not, but I want to take the liberty of expressing myself to the effect that there should be a committee appointed from this association, which armed with the program for research work of the Technical Investigation Committee and with that information memorialize the associations to which the doctor has referred for support, because this effort so much needed of which he speaks, is for the benefit of all clay industries, and is a work which all these various organizations should support. I believe we can find the funds. I move such a committee be appointed.

President Robb: I was just rising to ask for discussion, and I thank Mr. Blair for starting it. Is there a second to this motion?

Douglas F. Stevens, Danville, Ill. I would be glad to second Mr. Blair's motion and in connection I think it only proper that we should express our appreciation of the splendid work which the Committee on Technical Investigation has performed in the past. I think the great value of this work is fully appreciated, not only by this association but by the different branches of the industry to which reference has been made. I myself am a member of the Face Brick and the Common Brick Associations. As I think you all understand these other associations are commercial and not educational in character, and therefore, it would not be within the scope of their purpose. It would be necessary that this enterprise or movement be presented from the commercial point of view and I think there would be no difficulty in bringing to these organizations that the spending of their money for such investigation would have a direct commercial benefit. There is no subject so keenly in the mind of every brick and clay manufacturer today as the subject of burning, and nowhere can we get as reliable information as we can from Dr. Bleininger and the other members of the Committee on Technical Investigation, and if the matter is presented to the Face Brick Association and the Common Brick Association and the other associations in the industry, I believe we will have no difficulty in securing their co-operation.

President Robb: Is there any other discussion? If not, we will vote on the question.

Carried.

Pesident Robb: The motion was to appoint a committee to memorialize these other associations, and as I leave the chair in a very short time, I will leave the appointing of that committee to my successor. What is the next in order, Mr. Secretary?

Secretary Randall: The next formal number on the program is "Reports of other Committees." The first is the Committee on Fire Prevention, and as we will have a paper later in the week which I am sure you will find of real interest and worth while, I presume the committee regards that paper as their report. The Committee on Efficient Engineering will be covered by papers on Brickyard Equipment. Vice-President Dunwody, chairman of the Committee on Publicity, is unable to be here on account of illness, so I judge there are no further committee reports to be made at this time. With the consent of the convention we would like to make a little shift in the program and present the first paper "Retrospect and Prospect" by George M. Fiske, and with that paper I want to present three slides, and then we can go back to the regular order of business.

RETROSPECT AND PROSPECT.

To the members of the National Brick Manufacturers' Association,

My Dear Friends:—

Mr. Randall has invited me to send what he has called a "Farewell Letter" which invitation I am pleased to accept with the reminder that if I should appear again, at some future convention, it would only be my second farewell appearance. I have been assigned the subject of "Retrospect and Prospect." Retrospect is certainly a proper subject for a man almost four scores, whose observations cover the entire period of the life of the N. B. M. A.

My mind goes back to the first convention which I attended, that at Philadelphia in 1889, just 31 years ago. I had been asked to read a paper and took for my subject "Color and Texture in Brickwork." At that time the Dry Press Process producing a perfect brick mechanically and of uniform color was practically holding the field, and the general opinion was that it was the "ne plus ultra" of the brick industry. Fire-flashed brick were just beginning to attract notice in the east. I was greatly interested in the same and had done much experimenting which indicated great promise of important results.

The paper inspired quite a long and interesting discussion. Messrs. Purington, Alsip, Gates and Ittner expressed their approval of it and their opinion that it forecast the opening of a new era in the brick business. Others were inclined to discredit the whole idea. Mr. Eudaly was especially emphatic in that direction and said, "I hold that the time will never come when uniformity in brick and clay work—the perfect brick—will not be the thing to be desired by bricklayers and architects. Let us not drift from these landmarks for I assure you there is where we will arrive. There is no question about it."

The subsequent history of the industry, the multitude of notable examples of rough texture brickwork of the most beautiful colors ever before seen, the revolution in, and the uplift of the whole industry from one of mere utility to one of both utility and artistic beauty has been the answer to that question.

I recall another Convention that at Washington in 1892, where I utterly failed to carry my hearers with me in an attempt to prove that Adam was the first brickmaker and that the Garden of Eden was a brickyard. I thought I had strong evidence reasonably established by Holy writ, but I was laughed out of court, for no one had ever seen a brickyard that at all met his conception of the Garden of Eden.

I remember with much pleasure other conventions, at Old Point Comfort, at Atlanta, at Pittsburgh, at Cleveland, at Boston, and Rochester, N. Y., which was the last one I attended.

Among the pleasantest recollections of a busy business life are those of my connection with the N. B. M. A. and my association with the fine class of men connected therewith. I can truthfully say my membership in the Association has been of very great value to me in a business way. In my opinion any man actively engaged in the business makes a great mistake if he does not avail himself of that privilege. Now I am laid on the shelf and I am glad that I am old, that is I am glad I have been permitted to live to become old, for old age has its privileges and its joys that youth knows not of. My advice to youth and middle age is, do not dread old age. Someone has written—

"Not till life's heat has cooled,
The headlong rush slowed to a quiet pace
And every purblind passion that assailed our noisier years
Spurs us in vain,
And, weary of the strife, we care not
Who loses or who wins,
Not till the best of life seems past
The best of life begins,
For the world widens when
Such hope of trivial gain
As ruled us once lies broken
Like our Children's toys,
And there comes to us from out the windless height,
Such nobler, clearer thoughts that are unto the soul
What stars are to the night."

Now as to Prospects. That of brick industry I should say is very bright. The storm of disaster brought on by war conditions has been bravely met and weathered. The call of the market now is for renewed energy, enthusiasm and achievement. This call I am sure the members of the N. B. M. A. will meet to the full.

"Go to it! Boys, go to it!"

But how about other prospects. For our beloved Country? for the world? for Humanity? This is a "New World" indeed. The mind can scarcely grasp the significance of the industrial, social and political changes that have already taken place, much less forecast what the future it to bring forth. Twenty-five years ago Edwin Markham wrote that remarkable poem "The Man With The Hoe," meaning the physical burden-bearers of the world. It would seem as if the poet were endowed with a prophetic vision of just what is happening today, for in the last verse are these words!

George M. Fiske, Boston, Mass.

**"Oh Masters, lords and rulers in all lands
How will the future reckon with this man?
How answer his brute question in that hour
When whirlwinds of rebellion shake the world?"**

That hour has come. "Whirlwinds of rebellion" are shaking the social, industrial and political worlds to their very foundations. "The brute question" of the Man with the Hoe is ringing throughout Christendom.

"Why should I not treat you as you have treated me?"

How indeed, can we answer that question. One thing is evident. **The world needs new management.** The old management inspired largely by that old heathen adage "Let him who has the power get and let him keep who can" has well-nigh wrecked our boasted civilization. This world does not belong to the politicians, nor to the capitalists, nor to the federations of labor, nor to any other selfish organization. In all its ramifications involving all the interests of humanity it belongs to God who created it and to Jesus Christ his son, who lived and died for it and whose right it is to reign, and who must reign to a far greater degree than in the past or no League of Nations or anything else can long prevent the recurrence of a war more horrible and fatal than the last.

Let the forces of Christianity arise in their united and sufficient power and demand that he whose right it is shall reign in the business affairs of the world, for upon that consummation today and forever hangs the hope of the world.

With kind regards to all and best wishes for the prosperity of the N. B. M. A. individually and collectively, I remain,

Sincerely Yours,
Geo. M. Fiske. (Applause)

Secretary Randall: I want to say in connection with this paper that while Mr. Fiske is not able to be with us in person he is in spirit. As most of you know he is well along in years and does not get far away from home. He is a fine old gentleman, of high character, one of the finest men we have ever had connected with this association, and his continued regard for the association and industry as made manifest by this farewell offering, is a touching tribute that should not not be forgotten.

F. K. Pence, Zanesville, Ohio: Mr. President, I would like to say a word of appreciation of what Mr. Randall and the officers of the association have done in inviting the Central Ohio Section of American Ceramic Society to meet here at the same time as the N. B. M. A. The members of that Section will hold a meeting this afternoon while you are holding your election. We wish to thank the members of the N. B. M. A. for your cordial good will and hearty co-operation in every way, and I will ask the members of the Central Ohio Section to retire at this time.

President Robb. I hope the rest of the members will remain in the room. This brings us to election of officers and we are now ready to hear nominations for President.

Jotham Post, East Williston, L. I., N. Y.

Election of Officers.

Jotham Post, Glenhead, L. I., N. Y.: I would like to nominate my good friend and brother brickmaker and neighbor, William K. Hammond of New York City for the office of President for the ensuing year.

John T. Hummert: I second the nomination.

George H. Clippert, Detroit, Mich.: I want to say a word in seconding the nomination of Mr. Hammond. It was my pleasure to be serving on the executive committee when the time came of selecting the place for our convention, and somebody suggested New York City. A protest was raised immediately, someone said you can't go to New York City, it is such a big place, you will lose yourselves there, no one will pay any attention to you. We finally decided to go to New York City. We got there and found a big town, and we found a big man who looked after our comforts. I do not want this opportunity to go by without seconding the nomination of Mr. Hammond for our president. I admire him very much and I hope he will be elected. In fact, I move that the rules of this association be suspended and the secretary cast the unanimous ballot of this convention for Mr. Hammond.

J. P. Cahoon, Salt Lake City, Utah: I second the motion. Carried.

President Robb: You have elected Mr. William K. Hammond president for the ensuing year. Nominations are now in order for first vice-president.

Secretary Randall: It is with real regret we must announce that our second vice president, W. E. Dunwody is detained at home by illness. You see this matter of attendance hinges a great deal on conditions that prevail at this time. Mr. Dunwody had expected to be here and is on our program, but sickness came to his family and as he himself is not in good health, his physician absolutely forbade him coming north. He is with us in spirit I know, and no one can regret more than he does that he is not with us today. He is a real man, a leader among the brick men of his state. I hope there will be unanimous action here that will advance him from second to first vice-president.

J. Fred Smith: I nominate Mr. W. E. Dunwody for first vice-president, and move the rules be suspended and the secretary cast the unanimous ballot of this convention for him.

J. Howard Chambers, Philadelphia: I second the motion. Carried.

President Robb: You have elected Mr. W. E. Dunwody of Macon, Ga., as your first vice-president. We will now hear nominations for second vice-president.

J. Howard Chambers: I move Mr. Wilson be advanced a step and made second vice-president, and that the rules be suspended and the secretary cast the unanimous vote of this convention for Mr. Thomas E. Wilson of Pittsburgh for second vice-president.

Charles F. Clippert, Detroit, Mich.: I second the motion. Carried.

President Robb: Mr. Thomas E. Wilson has been duly elected second vice-president for the ensuing year. This brings us to nominations for the third vice-president.

Ellis Lovejoy, Columbus, Ohio: It gives me pleasure to nominate for the third vice-president of the N. B. M. A. an Ohio Clayworker who is head and active manager of his company and is a representative of the brickmaking family whose history is closely interwoven with the clayworking history of the State of Ohio. His slogan as carried out in the policy of the company is to make better brick and more of them, ever better, evermore. Years ago he discarded the brickyard and in its place has built a modern brickmaking factory, which I hope is the prototype of others to follow under his management. He is an earnest, progressive, efficient brickmaker, and booster of the N. B. M. A., Mr. R. C. Burton, of Zanesville, Ohio. (Applause)

Fritz Salmen, Slidell, La.: I second the nomination of Mr. R. C. Burton for third vice-president of this association.

Wm. K. Hammond: I move the rules be suspended and the vote of this convention be cast for Mr. Burton for third vice-president.

Seconded by several, and carried.

President Robb: I declare Mr. R. C. Burton duly elected to the office of third vice-president. Nominations are now in order for treasurer.

George H. Clippert: There is only one man can be treasurer of this association.

President Robb: Name him.

Will P. Blair: I am pleased to place in nomination for treasurer of this association, the name of John W. Sibley, of Birmingham, Ala.

Thomas Simpson, Columbia, Tenn.: I second the nomination.

J. H. Chambers: I move we elect Mr. Sibley by a rising vote.

The convention rose simultaneously.

President Robb: Guess there is no question about Mr. Sibley's election. Now comes the tug of war. Who will you have for secretary of this association.

Douglas F. Stevens, Danville, Ill.: Mr. President, there are very few organizations of any sort so far as I know of in any industry that have had the privilege of having as their guiding spirit one individual. Our national organization has had that privilege ever since it was organized, we have had one man as secretary, and very largely the success of this association has been due to his ceaseless and persistent efforts, therefore, it is only proper that he should be continued in office. I have the honor and very great privilege of nominating for secretary of this national association Mr. Theodore A. Randall of Indianapolis, Ind. (Applause)

Wm. K. Hammond: I second the nomination, and move the rules be suspended and the assistant secretary cast the ballot of this convention for Mr. Randall.

Seconded by several, and carried.

President Robb: We got through that pretty well. What is the next Mr. Randall?

Secretary Randall: There is a member of the committee on Technical Investigation to be elected. As the committee now stands it is composed of Warren Griffiss, Baltimore, term expiring 1924; Prof. Edward Orton, Columbus, term expiring 1923; W. D. Richardson, Columbus, whose term expires in 1922; Prof. A. V. Bleininger of Pittsburgh, whose term expires in 1921; and Marion W. Blair, of Johnsonburgh, whose term expires this year. Mr. Blair is an earnest efficient member of this committee.

Charles H. Bryan: I would like to have someone on that committee who can talk English, most of these technical follows talk over our heads.

Secretary Randall: Mr. Blair is a Hoosier, and a practical brick man.

Douglas F. Stevens: I know there is no man in this association who is more interested in the advancement of the technical side of the industry than Mr. Blair. At Pittsburgh last year he was the leading spirit in trying to form a brick and tile section of the American Ceramic Society, and that he was not successful was not his fault. I feel Mr. Blair is certainly entitled to be continued a member of this committee, and I therefore nominate Marion Blair to succeed himself.

Warren Griffiss: I second the nomination.

Elisha Kane, Kushequa, Pa.: I move the rules be suspended and the secretary cast the ballot for Marion Blair for member of this committee.

Seconded by many and carried.

Installation of Officers.

President Robb: That completes the nomination and election of officers and we now come to the installation of officers: It usually falls to the chair to appoint a committee to escort the newly elected president to the chair, and I appoint myself that committee and I introduce to you Mr. Wm. K. Hammond, your new president. (Loud applause)

President Hammond's Acknowledgement.

Wm. K. Hammond: Well, now you have done it! I just want you to see what you have done. You have been so kind to me you really have disturbed my emotions. I thank you sincerely. I want to tell you how much I appreciate this. I appreciate the high character of the men and women whom I have known in the short time I have been a member. My friend Mr. Clippert speaks of New York—the first time I came into a convention of this now so much loved association was at the time you met in New York, and the "master mechanic" here, our secretary, brought me in and made me third vice-president. I did not know Clippert from Salmen or Salmen from Robb, but I know them now, and I know them for friends and I found them to be men. I remember Mr. Mayer spoke sentiments that aroused me. I knew Mr. Chambers by reputation and I talked with him, and I met the others, but I was not acquainted with the methods which you had adopted and which your—now our—secretary was developing. I thought I was coming into a commercial organization. I am very thankful I learned my mistake made at that time, and that I have found with such great advantage to myself that we are not a commercial organization. I remonstrated a little bit in my ignorant way at that time, and of course I was promptly sat down upon for the good of my soul. That is so, because I have learned so much from this association that the methods and objects which prevail in this association are not commercial, and I would not have been half developed if it had not been for this association. I have met men who look into other things, and have found them to be men not bent on trying to get a dollar away from me. I have met the women of the association, bright, sweet, charming women, who do not come to the conventions for the purpose of helping their husbands meet and turn against some other fellow in the same line of business, but come as an associate and an assistant in helping to spend the money they have made the past year and get enjoyment out of it and get something to take home with them and which they may talk about the coming year, and hope for the time when another convention will give them an opportunity to again meet and greet friends whom they had bid good bye at the last hour of the last convention.

I would like to make a speech if I were any kind of an orator. The things which I would say are not the things which I now feel I would like to say, but I hope there will be many more conventions. I recognize of course that the presidents pass on. It was only last year when George Clippert stood here and passed, and as he turned, J. W. Robb came in. I will never forget Mr. Clippert's expression. He said, "I am sorry to go out." (Laughter). You see a fellow comes up with ambition, his pride swells up, he is going to be IT, and he is hardly more than IT before the next fellow comes along and swats him and he is gone. Three years ago, looking ahead, I said, "That is a long time to wait," but bless my heart it has been no time at all, and here I am, and the first thing you know, a few drinks of the pure water of Columbus, and a few more snows in New York and throughout the country and I will have gone on out that way after Robb and Clippert and the rest. I liken this to an advertisement that I saw not long since. I cannot for my life recall what that advertisement was for, but it showed the fellows coming up (maybe it was underwear for all I know)—they started up stairs, and they were climbing up boys when they started and going down on the other side old men with gray hair. Now we come up on this side—I was only a boy when I started up this stair, with Robb just ahead of me, he has lots of hair, and if I had not had mine cut by a most artistic barber I would not have any, and by the time I get through perhaps that artistic barber may not be able to make it look like much.

President-Elect William K. Hammond, New York, N. Y.

A friend of mine in New York City, a very fine jurist, was riding home with me one time and he said, "The greatest speech I have ever made, I made last night." I said, "Why I was with you last night, I did not hear you say much, I really thought it was about as common an expression as I ever heard come from you? To what do you allude?" He said, "Why Hammond, after I got home and had my bath, and had gone to bed I laid there on my side, and I made the most beautiful speech that any man or angel ever could have made." So I know very well the best speech I make will be made some other time than now, when I would give anything in the world to say to you the things I would like to say. I thank you, I appreciate this honor. My heart is with the organization, and with our secretary in all his endeavors. I ask you to help me all you can. I thank you. (Applause)

President Robb: Mr. Dunwody is not with us, so we will have to pass the introduction of our first vice-president. I will appoint Mr. C. P. Mayer and Mr. Will P. Blair to escort Mr. Thomas E. Wilson to the platform.

Secretary Randall: We ought to make him give us a double dose this year, for you will remember last year he "sneaked" on us and did not make any speech at all.

President Robb: Ladies and Gentlemen, permit me to instroduce your Second Vice-President Mr. Thomas E. Wilson of Pittsburgh.

Vice-President Wilson: It is a good thing there were two members of that escort committee or I would not be able to stand at all. It was furtherest from my mind that I would be called upon to say anything, especially following a man who has been three years getting his speech ready, (Laughter), I was counting on what I might have to say in two years. I certainly am glad to appear before you, and highly appreciate the honor you have conferred on me, and in two years I hope I can do better than I can today. Everybody in the brick business, every man in the industry ought to belong not only to this association, but to some of the other associations that have sprung from this association. I belong to the Common Brick Manufacturers' Association, and I am glad I joined it, and I would like to see every common brick manufacturer of this association join with them, and I would like to have all the members of the Common Brick Association join with this and work in harmony. It would do us all good to work together for the benefit of the industry. I thank you again for this honor. I will try to talk a little more after I have had two years to think of something to say. (Applause)

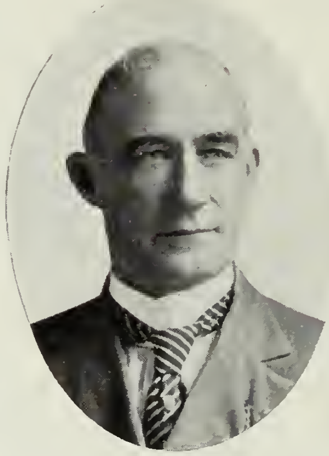
President Robb: The next is third vice-president. I will appoint Mr. Ellis Lovejoy and Mr. W. D. Richardson to escort him to the platform. Gentlement of the Convention, Mr. R. C, Burton, our new Third Vice-President.

Vice-President Burton: Mr. Chairman, Ladies and Gentlemen, I am not prepared to make any talk for President Hammond here has taken all my thunder. I have gone down the list and on as short notice as I could get myself together, he was reeling off what I wanted to say, and then again I noticed as soon as it was announced I would be your third vice-president a good many got up and went out, but I took courage. Being a staunch democrat, I happened to be down in Baltimore one day, and I thought I would go on over to Washington because I had heard one of our Ohio Congressman was going to talk and I wanted to hear Charles Grover of the Sixth District talk. I found very few of the congressmen around there, and some of them were laughing and talking, and some of them were sleeping. The time came for Mr. Grover to deliver his address, and that did not seem to waken anyone, and he went on roaring and tearing and spouting, and no one paid any attention to him. The next day I read all about his speech in the papers, and how the galleries applauded, and there was not a soul in the gallery (laughter) so I am counting on what the secretary is going to say about my speech, rather than what I am goiing to say. I have always been a booster in the brick business. I commenced pretty young; I married into a family of brickmakers, my father-in-law knew he had to keep me, so he put me on the brickyard. That is how I came to be a brickmaker, and if I have achieved anything it is because I had to and not because of my own liking.

I am still a booster. After I was notified I was your third vice-president I immediately commenced pushing. I want to get after the second vice-president and the first vice-president and get them out of the way so I can get to the top as soon as I can, for at my age I have got to hustle to get there. It has always been my desire to be president of this association, and I have saved all of the speeches of the past thirty-three presidents of this association so three years from now I am going to be pretty well equipped for delivering a good, long speech. Again I thank you. (Applause.)

President Robb: We will have to pass the introduction of our treasurer, and the next pleasure I will have will be to introduce to you this stranger, the Secretary, Theodore A. Randall. (The convention immediately arose as a tribute to Secretary Randall and his years of service for the association.)

Secretary Randall: Mr. President, and gentlemen of the convention, I thank you very, very much. Some two or three weeks ago by invitation I went down to Kentucky and addressed a convention of lumbermen about brick, and I got away with it pretty good (they seemed to like it), but the next week they had a riot in the town and killed six people. I don't know whether I had better try to talk much here. I don't want any of you to have any trouble before you get away. I have here in my hand a little booklet that is full of good things and I find the following little couplet: "One of the best points about a dog is he will not go on arguing with you after you have proved conclusively he is wrong." I I have argued more or less in connection with the work of this association, and I think there is quite a bit of philosophy connected with that quotation. I am going to quit arguing so much and let the other fellow argue. (Applause.) I am going to go right on with my work. It is not going to be an easy thing for me to do, not to argue when you think you are right. It is a natural thing to try to convince the other fellow he is wrong and you are right, but you know the old quotation, "Convince a man against his will, and he's of the same opinion still." I can say in absolute truth I have played the game fair and clean always. Never in my official life have I wittingly double-crossed any man, nor have I ever taken advantage of any man. I have played fair from start to finish. I think that is the secret of my success with this association, and, thank God, I have been successful in the work of this association. If you don't think so, look at my friends scattered all over this country that have come to me through this association. If I had never gained anything else the friendship of these men, the leaders in the clay industries is ample compensation—no man could ask for more. I am going ahead with my work and, Providence permitting, next year I will have a report worth while to make to you. I thank you again from the bottom of my heart. (Applause.)



D. Warren DeRosay, Corry, Pa.

President Robb: It is now my pleasure to present the gavel to President William K. Hammond. I hope Mr. Hammond, you will get as much enjoyment and pleasure out of the work this next year as I did last year. (Applause.)

President Hammond: Your expressions are most kind. I am wondering if this same gavel has been used by all the preceding presidents. In that event you have been a very peacefully ruled organization, else this gavel would have been smashed by some of my predecessors. I hope the membership will give me all the assistance they can, as I may be a little bit green. What is the next in order, Mr. Secretary?

Secretary Randall: The next is something that will be of interest to all of you. We are going to hear from our good old friend, Colonel Orton. (Applause.)

Colonel Edward Orton: When Mr. Randall asked me to appear on the program, I told him I would find it very difficult to do so; for the last three years my mind has been so occupied with other work that it would be very difficult to present a paper very germane to your work. He said: "Tell them what you have been thinking about." I have tried to do that; the experiences I have had the last year or two has forced me to think along this line, and I am going to give my thoughts to you for what they may be worth.

AMERICANISM.

By Colonel Edward Orton, Jr.

Mr. President, Ladies and Gentlemen:

Americanism is a complex word. It is not capable of any simple and easily framed definition. It has two entirely separate aspects. It may be thought of as a code of principles or platform, partly written and partly unwritten, which has grown up in the country during three hundred years, and which in the lapse of time has become fairly definite and generally accepted, or it may be thought of as the feeling of reverence and love for that code and the moral standards and strength of character which gave it birth and have maintained its life. The first of these aspects is like our human body, material. The second is like our soul, spiritual. All great words like soul, and love and home and country are after all undefinable, and take on full meaning only when emotion comes to the aid of dull reason.

Col. Edward Orton, Jr., Columbus, Ohio.

Neither aspect of Americanism can be minimized or ignored, if we wish to maintain alight the sacred fire of our patriotism. Without the constant action of our calm intellectual faculties, to examine and re-examine each new phase and tendency of our national life, we should soon find our enthusiasms and emotions fixed upon untenable grounds. And, similarly, without that quickening of the spirit, and that hot and tumultuous surge of emotion, which rushes over us at the signal of our country's need, the verbal expression of the code of principles would soon be as meaningless to us as the old clay tablets of the Assyrians.

It is natural and gratifying to our self love as a people, to assume that Americanism, that combination of reasoned respect for our institutions and love for the spiritual background which gave them birth, is a national attribute, a universal possession of the people of the land. Would that we could justify such a claim! It is exactly the same with patriotism as with religion. Few dispute its obligation. Nearly all admit in some degree its binding force. But, weak humanity only attains a portion of its ideals. In patriotism, as in Godliness, the vast mass of the people are only indifferently perfect. A small minority constitute the extremes of civic virtue and destructive vice.

A great awakening of patriotic enthusiasm swept the land as we entered the war. It arose slowly, for we were still and still remain a politically immature people, with but little international consciousness, or appreciation of the obligations of world citizenship. Millions of good people in this land had almost no conception of the moral causes of the war, and still less conception of any reasons why we should be embroiled in it. But, as the days passed, and discussion made the situation gradually more generally understood, the fervor of patriotism burned steadily brighter and brighter, until the voice of the people echoed from shore to shore, demanding to be led against the arch-enemy of civilization. With the end of the war, and the return of the soldiers and sailors to their homes; with the formation of the American Legion, with its sturdy doctrine of one hundred per cent. Americanism; with frequent and convincing proof of the prevalence of a well organized propaganda for creating social unrest, revolution and anarchy in our land, this patriotic zeal has if anything grown stronger.

It is still too early to tell whether this enthusiasm and fervor for Americanism is going to expend itself in talk, or whether the deeper currents of our life have been sufficiently stirred to insure some more permanent result. It has produced one useful result at least: It has caused a frequent effort to define what we mean by Americanism, and to set forth a platform, or declaration of principles, to which all American citizens should be willing to agree. No one effort to write such a code or platform can possibly cover the ground: if each one of us wrote one, each would be different. But, after all, there are some big outstanding principles to the inclusion of which there would be general agreement. To the writer, the following seem vital. Not one could be left out, without danger to our distinctive type of civilization. Doubtless others might well be added, yet if the spirit of those now set forth are obeyed, there would be little left to desire. These principles are:

(1) **Government by law.**

This means not only submission of the individual to the law, however distasteful or ill advised it may seem to him, but also his support to make law enforcement effective, and insure the maintenance of order at all times.

(2) **The Law shall be the will of the majority.**

Anything other than majority rule is not democracy or republicanism. It is autocracy.

(3) **The right of the minority to express itself shall be fully safeguarded.**

The minority of one day may be the majority of the next. The minority must have its opportunity to convert the majority to its view. This involves the right of free speech, which is further set forth and modified in paragraph five.

(4) **Strict adherence to the constitutional method of making all changes in the form of government.**

Our Constitution itself provides a fair and rational way for the cure of all governmental ills. There is no necessity ever to resort to force, if the above principles are followed. All that is necessary to make a change, is that a majority shall desire it. If a minority, failing to convert the majority to its view, then resorts to force, it thereby becomes a rebel and an outlaw.

(5) **The liberty of the individual in all things, so far as compatible with the general weal. The criterion of**

this compatibility shall be the law.

This clause distinguishes between liberty and license. Most of our troubles in this country come from inability to distinguish between them. The anarchist invokes the right of free speech, but we limit that right when it is used to advocate overthrow of our institutions by force. The polygamist invokes freedom of conscience, but we limit that, when it advocates social immorality. The criminal advocates freedom of action, but we limit it when it extends to murder or theft. The toper or drug-addict invokes personal freedom, but we limit that freedom when it is used to consume poisonous drugs which deprive people of their reason or their health, and make them either a public menace or a public charge.

(6) **The obligation of the citizen to be honest.**

The honesty of the citizen is his intimately personal affair, and lies between him and his eternal salvation. But, it also lies between him and his duty to the state. A dishonest society can never be a durable society. The training of our citizens in this foundation of all public morality and civic virtue is a national as well as a family concern.

(7) **The obligation of the citizen to work.**

Nature is as beneficent to the worker as she is merciless to the drone. No state composed of idle or lazy people can thrive.

(8) **The obligation of the citizen to thrift.**

Those who fling away their money or resources of any kind are a menace to the state. Personal liberty does not extend to the right to waste or ruin either private wealth or natural resources. To waste either is immoral and immorality rots government.

(9) **The obligation of the citizen to serve his country.**

The privileges of citizenship are only those of membership in a big co-operative organization for mutual benefit. No corporation owes anything to its members, except as they do their part towards earning it. The state owes no man a living, but every man owes the state for the opportunity to exist in peace, and to earn his living in a protected community. The state has the right to demand from every man, first, military service, to protect with his body the perpetuity of the community; second, financial support, or the payment of his share of the common expense; and thirdly, intellectual service or the labor of making the laws, voting, and helping to carry on the machinery of government.

(10) **The obligation of the citizen to be intelligent.**

No republic can live, unenlightened. Men, to be able to distinguish between right and wrong, and to choose wisely in the problems of citizenship, must be intelligent. Otherwise, the intelligent minority will rule the unintelligent majority, as they have from the dawn of history. Stamp out illiteracy.

(11) **The obligation of the citizen to be healthy.**

Disease, mostly preventable, and caused by careless living, lack of exercise, and personal indulgence, has already sapped the vitality of our people to a considerable degree. The citizen owes it to his neighbor and to his state, as well as to himself, not to become a breeder and disseminator of disease to others.

(12) **The obligation of the citizen to love his fellow men.**

No community, embittered by hates, can ever become strong. Team-play and co-operation is impossible between people who do not possess mutual good will. Government and national progress is just a matter of team-play.

This expression of principles will serve as well as another, to crystallize what we mean by Americanism. There is need of spreading such a doctrine. We have lived so long in smug comfort and isolation, that our people are forgetting that Governments are not automatic, and are only as good and efficient as the people that compose them. In short, we have been too busy with our selfish schemes to give that care to our social conditions, which alone can make any personal plans secure. We must give more of ourselves to our country, if we expect it to remain a good place for us or our descendants.

That many persons sense this, is pretty clearly shown by our Americanization programs, national, state, municipal and industrial. A great activity has been shown in organizing these movements. But, a wrong slant is given to most of these efforts, by our too ready assumption that it is only the foreign-born who need to be Americanized. In the throes of war, and the scarcely less serious struggles of reconstruction in which we are still immersed, when disloyalty, sedition and anarchy have appeared in many quarters simultaneously, and dangerous far-flung plots are revealed among numerous groups of people, it has been certainly the most popular view to attribute these noxious exhibitions to the aliens within our gates. This assumption was natural enough as applied to enemy aliens in war time, but it is now applied to all aliens, and is so constantly made and so seldom contradicted, that the people have very generally accepted it as the truth. We have been prone to overlook the fact that the lists of these malcontents, when published in the papers, very generally contain names of anglo-saxon derivation. Likewise the fact that among those arrested, are many whose residence among us has been of many years' duration, and that while foreign-born, they are American bred.

George H. Clippert, Detroit, Mich.

Without in any wise seeking to diminish the guilt of some political groups, notably the imported Russian Communists, who have brought into this peaceful land their fantastic and distorted visions of a new social system, to be built up over night on the bloody and flaming ruins of all the civilization that mankind has thus far achieved, and who advocate unrestrained and brutal force in the creation of this millenium, it must still be pointed out that these groups comprise but a very small fraction of our alien and foreign born population. Great masses of people, who came to America with visions of an enchanted land of freedom, where all were to be brothers and equals in an ideal democracy, have almost universally had their visions shattered by finding themselves a part of an economic machine as remorseless as that from which they have fled. They have found that the struggle for existence here is well nigh as keen; the liberty they had vaguely expected did not materialize in power to do anything that they had not always done; that the equality they expected did not seem to mean any too much in the courts, and nothing at all in any social sense; and that above all, in the midst of crowds, they were isolated, and while among us, they were not of us. And now, to all of these disillusionments and disappointments, is added the great and bitter injustice of being lumped off as probable anarchists, because they still speak a foreign tongue, and not because of any known hostile acts or sentiments.

We have failed to at all adequately recognize that these foreigners come from countries much older and more settled in their civilizations than we are, and that they have as much to give us as we have to give them, if we could only meet them on a plane of friendly equality and seek to learn what they know, instead to trying to force upon them, willy-nilly, our own views of everything. It is this very lack of friendly equality which herds these people in swarming tenements in the slums, in box cars, and in shacks; it is the sweeping generalization that they are all "wops" and "dagoes" or some other opprobrious name, which makes them draw back in their shell, and resolve to exploit this country to the limit, since they are not going to be allowed to be a real part of it. Most of them would respond so happily, and with such enthusiasm, to the least overture of friendship, which has not patronage or ultimate plunder for its object.

Fritz Salmen, Slidell, La.

The searchlight has been turned upon the sore spots in our national life by the draft in the war. For the first time in three generations, it was necessary to marshall the whole man power of the country, in order to enable us to fight with any chance of success. What were these lessons of the draft?

First, there was a deplorable lack of realization among great masses of the people, American-born as much as foreign-born, of any sense of bodily obligation to serve. While the response of the country as a whole was wonderful, and produced the greatest mobilization in the world's history, there were nevertheless draft-dodgers by the thousands, slackers by the regiment, who used an energy in evading the draft that would have won them the D. S. C. in the service. We had conscientious objectors by the battalion, whose religious scruples had never before prevented them from doing whatever they wanted to do. We had quantities of men who suddenly found themselves essential in their industry, and that they could not be spared to fight. And this, without derogation to that other great host whom the draft boards condemned to stay in the industries, when they most bitterly resented the loss of their chance to demonstrate their manhood in the trenches. Do these slackers need to be Americanized?

Second, we found an appalling situation as to physical fitness. Not only in cities, but in great districts, notably among the negroes of the South, there were large proportions of men so ravaged by disease, mostly preventable, as to be unfit for training—literally not worth the money it would cost to fix them up. We found another class of large proportions who were defectives from all sorts of ailments, eyes, ears, teeth, spines, feet, as well as the industrially maimed, and born cripples. Another great class, the existence of which we had no previous national consciousness, were the psychopathics, the epileptics, the stupid, the nervous, the erratic, the mildly demented. Thousands were sent home from the camps, branded as unfit, who had not the slightest previous idea that their disability was such as to disqualify them. In short, we passed the flower of the youth of the land, ten millions of them, through a sieve, and were astounded to find that 25 per cent remained behind in the dross.

Third, we found illiteracy and ignorance in a degree, and in localities not previously suspected, sufficient to shock the people, and although we did not reject men for this cause, we know in our hearts that they were subjected to an extra hazard, from their very inability to receive or transmit instructions.

Universal Military Training is before the country for adoption. There is a hereditary and traditional dislike for any enforced military service, and this dislike extends down even to training for service. Nevertheless, we must remember that we have had to come to it, in every serious war we have ever engaged in. We must not forget that our wars have been outrageously costly in life and treasure, because we never would draft men in quantity until forced by reverses, nor provide adequate munitions until the emergency was upon us. And now, we have discovered by actual trial, on a scale hitherto unparalleled, that universal military training would avoid these costly mistakes in future, and what is far more important, that it is far more valuable to us for its influence in civic betterment than in a military way. It has turned the bright glare of publicity on our faults, and has shown the sores that disfigure our body-politic, and threaten its vitals. Because this knowledge is disagreeable, shall it be put aside? Shall the agency which has so effectually held the mirror to our face be now broken?

Is it not rather the part of a rational people to now make provision for the continued use of the method? What single step can we take to secure our future as a nation, that will compare in efficiency with that of seeing to it that every young man, before he votes, shall have served his apprenticeship in the school of citizenship—in enforced training for his unavoidable obligations as a member of the community in times of peace, as well as his possible duties in time of war?

It is not proper to spend enough of the time of this Convention, to make an adequate presentation of the many ways in which Universal Military Training for our youth would benefit this nation. Permit me, however, to make this statement with the utmost emphasis and solemnity of which I am capable, backed up by whatever weight my life as an educator of young men, as an engineer, and as a business man may give me, that

> **Universal Military Training is the most powerful agency that can be employed for developing the Americanism of our youth, and for preserving our ideals as a free and self-governing people. No other training can take its place.**

And now, the application? In what special ways does this homily apply to the clay manufacturer? In none, that I can see! The clay industry is typically American. It has all the common faults of our present social structure. It has all the virtues of the same society. It has the problem of alien labor, living herded in masses. It has the problem of the negro, and the illiterate white. It has the problem of class antagonism, and the strife of labor and capital. It has its crowded centers, where conditions are strained, and its small quiet communities where life is still patriarchal.

But to one and all, the problem is the same. It is to bring home to the people their duty to consecrate their lives to the practice of the principles of Americanism, and that higher law, given by the Master, on the shores of the Sea of Gallilee, nineteen hundreds years ago—**"Do ye unto all men even as ye would have them do unto you."**

President Hammond: A treat such as listening to that recondite paper could not be equalled anywhere I know of, from any man I know except Colonel Orton.

J. Howard Chambers: I feel a good deal of diffidence in venturing a word or two. Before we pass this paper I want to say that if this convention throughout this whole week brings forth nothing else than an opportunity for a presentation of Prof. Orton's paper, it will have justified this convention. I am impressed throughout with the vein of personal responsibility that he lays upon us, to see that these things are done. It is not a job we can pass on to anyone else, but every man here according to his understanding and according to his opportunity is charged with the burden of doing these things. I honestly believe that we who are employers and have an opportunity of coming in personal touch with bodies of men, many of whom do not understand, do not appreciate Americanism as Colonel Orton has expressed it today, if we would undertake to see that these men do get a better and truer understanding of these principles, just to the degree that we do that, I believe that nine-tenths of all the isms and ists with which we are laboring today, will vanish. (Applause.)

Will P. Blair: Sometimes in the past this organization, when we have had papers read to us that we have regarded as of rather extraordinary value, we have ordered such papers printed in pamphlet form and paid for out of our treasury. I confess my utter inability to express the appreciation I feel for this paper with which Colonel Orton has honored this organization. I wish to move that this paper be printed in pamphlet form, not out of compliment to Colonel Orton, not on account of this organization, but as a matter of duty, that we as an organization owe to this country. (Applause).

Wm. Hammerschmidt: I second Mr. Blair's motion.

President Hammond: I think there could be no thought of discussing a motion as that. I will ask you to vote on it.

Carried.

President Hammond: This paper is to be discussed according to our program by Mr. Charles Bryan, of Detroit. If we should all talk and all do our best, none could do it justice, but I am sure Mr. Bryan can give us something that we will all be glad to hear.

Charles H. Bryan: I witnessed a play in early youth. I do not know now whether it was "The Old Homestead" or "Way Down East," but at the end of the play the principal character, an old fellow, busies himself fixing the fire and then quietly goes upstairs and the curtain goes down. I do not want to spoil by my voice or any word of mine, the masterpiece Prof. Orton has given us. I want to leave it with you, just as he gave it to you, and that thought will have its influence for some time and you will carry it away with you, at least to a degree.

Teach Americanism in the Public Schools

Secretary Randall: I have a matter along this same line which I want to present and which I am sure will meet with the approval of Colonel Orton. It is a resolution on Americanism, produced and adopted by the Rotary Club of Indianapolis, and it touches, to my mind, the fundamental of this age, the education of the youth of our land. We must go back to our schools with this proposition of education in Americanism. It should be taught in the grade schools of this country in the English language and no other language under our flag. (Applause.)

RESOLUTION FOR THE TEACHING OF AMERICANISM.

WHEREAS, The social and industrial unrest now spreading in our country and constituting a serious menace to our institutions is due to lack of knowledge and appreciation of the principles of civil liberty guaranteed by the constitution and exemplified by the history of the United States; and

WHEREAS, The stability of our institutions and the future welfare of our civilization requires not only the education of the present foreign born element of our population, but also the careful education of the coming generation of citizens; and

WHEREAS, We recognize in the common and public schools throughout the country a far-reaching agency, already organized and waiting to be used, for the instruction of the youth of the land on this most important of all subjects, and we believe that systematic education in Americanism must not longer be omitted from our public schools or left to the casual efforts of individual localities or individual teachers, but that the lessons of applied patriotism must be adopted and seriously taught in all grades of our public schools; now, therefore, be it

RESOLVED, That the National Brick Manufacturers' Association in convention assembled, heartily approves of the establishment of properly related courses of instruction in history, economics, and civil government and that same should be adopted and required in every public school; that these branches should be given in all grades, beginning with the youngest and continuing through the high schools, and should be taught in clear and simple manner, suitably adapted to the different grades, and with the same system and regularity as other fundamental subjects are taught; that such instruction should include the following: Such incidents from American history and pages from the lives of our great men as will inspire love of country and devotion to American ideals; the long proven advantage of our American form of representative government as distinguished from a pure democracy; that domination by any class or group, or the enforcement of demands by any method other than due process of law, is destructive of all liberty; that all necessary changes in law can be obtained in due time by orderly and constitutional methods whenever the majority of our people earnestly desire them; that the right to own property is itself an attribute of liberty and an essential condition of social and political progress; that all kinds of labor, whether of hand or brain, are equally necessary, and must have equal honor and consideration; the elementary economic principle that every man shall enjoy the right to work, to own and save the just fruits of his labor, and that capital is only the accumulation of individual savings; that artificial restriction of output is an economic waste, which involves loss of opportunity to the individual worker and violates the rights of the public; that civil liberty consists of the due relation of individual rights, checks against arbitrary power, and guarantees of self-government; and all other essential principles of American constitutional government, as established by our forefathers, and under which, for nearly a cenutry and a half, the people of America have enjoyed the greatest degree of freedom known to the history of man; and further be it

Charles H. Bryan, Detroit, Mich.

RESOLVED, That we, the members of the National Brick Manufacturers' Association, urge the adoption of such instruction in the public schools of our various localities and do what we can individually to assist school officials in teaching Americanism in the grade schools of the nation.

President Hammond: The very able resolution as read by our Secretary, coming from the Rotary Club of Indianapolis, seems to me, very opportune at this time. It could not have been more so had it been specially prepared to follow Prof. Orton's paper. As Prof. Orton was speaking, my mind went back to the time when I sat before a bench at school and read speeches and doings of Patrick Henry and others. I learned there a distinct respect for the opinion of mankind and followed along down until it came to the

Declaration that these people had written and endorsed, that "for life, liberty and the pursuit of happiness, we pledge our lives, our fortunes and our sacred honor." Prof. Orton carries that out and this resolution fits in with Prof. Orton's paper. This should be placed in a series of chapters, not all at once, in the school books. It would be too much at one time, but day after day a little part of it, a chapter now and a chapter the next day, until from the opening of the Third Reader to the Fourth Reader (they may not have that kind of books nowadays), but I mean it shall be placed in books that the children, coming along, shall have these thoughts, feeling that it has been transmitted by the fathers of the Republic, endorsed by those who live now, and the thought that we have received it here and passed it down that coming citizens shall receive it as their fathers lived it, as we might say, we pledge our lives, our fortunes and our sacred honor to perpetuate these principles while mankind exists. I trust this resolution, as read by the Secretary, will receive the endorsement of this association. All those in favor of this endorsement will please say "I."

Carried.

The Clayworkers' Tree of Knowledge.

President Hammond: With all respect to Mr. Randall as the father of the family, I want to say something relative to our family tree. There has been a whole lot of branches to this family tree, but, as you know, the youngest one held its second anniversary this week and it is home with the old folks—I refer to the Common Brick Manufacturers' Association. It was christened last night and born this morning, and it has adjourned, but many of the members are sitting here with us. I think it would be but proper that we invite them all to participate with us. I just want to advise them that every member of the Common Brick Manufacturers' Association is eligible to membership in this Association, and it is his duty as a citizen and a brickmaker to belong to the National Brick Manufacturers' Association. (Applause.) Again the old folks are eligible to membership in the younger association, and where they are eligible it is their duty to belong to the Common Brick Manufacturers' Association of America. Not that the two are one, but it follows that they can be helpful to each other. I note Mr. Mayer does not agree with me, but what I have said is true, Mr. Mayer.

J. H. Chambers, Philadelphia, Pa.

C. P. Mayer: The reason I shook my head, Mr. President, was because the Common Brick Association is a commercial organization. Some of us are manufacturers of paving brick, and some of us are manufacturers of face brick and sewer pipe and of other clay products, and we could not belong to the Common Brick Association unless we contributed to their association according to their rules. For that reason we cannot belong to them unless we wish to make a deliberate donation.

President Hammond: The point was well taken, Mr. Mayer. When one has accomplished what he is after, there is no need to talk longer. The common brick manufacturers who are here are eligible to the Common Brick Manufacturers' Association, and if they do not belong to it and support it, they are slackers. What is the next in order, Mr. Secretary.

Secretary Randall: We have really finished the business of the afternoon, but before we adjourn I would like to say we have a number of invitations for our next convention. Springfield, Mass., has been represented here this week by a gentleman who has urged upon us the advantages of Springfield as an attractive place for our coming convention. He has been called away and has asked me to bring this to the attention of our members. We also have written invitations from a number of other cities, and I move that the invitations from Springfield and these other cities be referred to the Executive Committee.

Wm. Hammerschmidt: Second the motion, and wish to add that every common brick manufacturer ought to be a member of this National Association. (Applause.)

Mr. Blair: Since we are under the head of miscellaneous business, as it were, I don't want this little repartee which has passed between our President and Mr. Mayer to go unnoticed. I heartily agree with the sentiment that every common brick manufacturer should belong to the Common Brick Manufacturers' Association. But I do not want to ignore the fact that there are some other clay industries represented here that hold a like and similar relation. I would not like to see any paving brick manufacturer in this country failing to belong to the Paving Brick Association; I would not like to see any hollow tile manufacturer, any drain tile manufacturer fail to belong to his proper commercial body. The time has come, if we expect to maintain the prestige of the clay industries of this country; we have got to be alive and awake and let ourselves and our industries be asserted and we will do something big; all of our efforts aided and supplemented along the line that has been so well outlined. have a proper sphere. The National Brick Manufacturers' Association should be supported by the various branches. (Applause.)

Elisha Kane: I notice that Mr. Blair did not suggest the advisability of the face brick manufacturers belonging to the Face Brick Association. Possibly that is because they all do, but even so, I thought they would like to have them included in the list and we would like to have them all members of this National Association.

Mr. Blair: I intended, of course, to include them in the list.

President Hammond: The face brick manufacturer should belong here. I hear a voice out there saying they don't. Well, my way of getting at a thing is to find out whether it is done or not, and then if it is not done, to see why it is not. If there is a suspicion in the mind of anyone that there are face brick men who do not belong to the N. B. M. A., let us find out why they do not. If there is a good reason, it is not known to us, and we will try to remove that reason, and constitute ourselves a committee to gather in the face brick manufacturers and make them members. (Applause.) Is there anything else, Mr. Secretary.

Secretary Randall: Just a matter of an announcement, and also before we close this session, I want to tender thanks to the donor of this beautiful bouquet of roses, which comes to the Assistant Secretary with the compliments of Mr. Frank B. Dunn.

J. Howard Chamber: I move we adjourn.

Seconded and carried.

SECOND SESSION

Thursday, 9:30 A. M., February 19th, 1920.

President Hammond: Come to order, gentlemen, and the second session of our convention is now under way, and the Secretary will announce the first order of business.

Secretary Randall: The first paper on the program this morning is a very interesting one, on "Common or Horse Sense in the Manufacture of Clay Products," by Walter Colyer, of Albion, Ills. Mr. Colyer is unable to be here, but has sent his paper.

COMMON OR HORSE SENSE IN THE MANUFACTURE OF CLAY PRODUCTS.

By Walter Colyer, Albion, Ill.

Mr. President and Gentlemen of the Convention:—

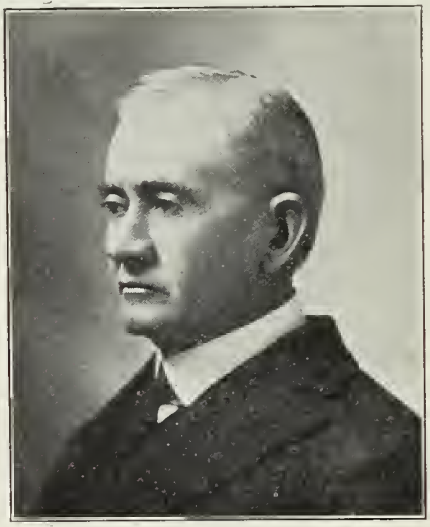
In times past some men have seemed of the opinion that the only requisities for a successful clay-working plant are a building site, a clay deposit and a bank account. In this paper I shall attempt to make plain the fact that there is yet another requisite equally indispensable if success is to be achieved.

No one can question the importance of an abundance of readily accessible material of a character and quality suited to the needs of the wares to be manufactured; a location that meets the demands as to markets, shipping facilities, fuel, and labor conditions. Yet possessing these and a well equipped manufacturing plant the undertaking will result disastrously if the element of common sense is not incorporated into every department of the business. Clay manufacturing is a chain reaching from the clay pit to finished product marketed and on the job. A break anywhere along the line, due to lack of exercise of plain common sense, spells ruin. The planning, building and equipping of the concern to the end that there may be a minimum operating expense and a maximum of profit in the production of high-class product avails nothing if the personnel of the organization itself is deficient in horse sense. The placing of incompetents in charge of the several departments, or even in charge of one department, and the ignoring of proven and recognized methods will prove to be a short cut to disaster. Success in clayworking is rarely attained through chance.

Poets are said to be born, not made. The same may be true of successful clayworkers, but I question the truth of it. However, the common run of men might appear to be laboring under the hallucination that, if given an opportunity, they are inherently qualified to handle a burnt clay plant without previous training or instruction. The mere fact that a man is an adroit politician, a successful merchant, or perchance a shrewd banker, affords no manner of guarantee that he possesses the sort of brand of common sense needful for the making of brick, tile, sewer pipe or crockery. I have several times been importuned by a reputed millionaire to assist him in planning and building a burnt shale factory at a point where no workable material of any sort has been discovered within a radius of a dozen miles. It is plain to understand what this man lacks. Not many years ago a company of men in Illinois invested thirty or forty thousand dollars in a brick and tile plant. An attempt was made to build a factory. It was located on top of a hill. Round down-draft kilns were built with solid bottoms, except only that four openings for draft, each two and one-half inches square, were left in the center of the floor. The engine was set up wrong end first, and numerous other innovations were incorporated in the layout. The immediate result was that a kiln of brick was partially burned after a month's hard firing. The ultimate result was bankruptcy. In that project common sense took a back seat. There now remains but a pile of junk and a hole in the ground to mark the site of the experiment. Instances are plentiful where many thousands of dollars have been invested in clayworking industries only to discover later on that the clay or shale was inadequate either in quality or quantity. Common sense suggests that the preliminary investigations cannot be too thorough. Oftentimes an apparently fine bank of material is but a camouflage for trash and rubbish under the outer covering.

The ordinary clay plant can never be made to take the place of the school of ceramics; the proper place for experiments is in the well equipped laboratory under the direction of trained experts. Moreover the experimental work should so far as possible be done in advance of the building operations; even at the best enough will remain to be worked out in detail afterward. Experiments coupled with plant operation are excessively costly and usually are but substitutes for dividends. Common sense warns against jeopardizing the efficiency of costly machinery in the hands of inefficient men. It is worse than folly to condemn a twenty-thousand-dollar power plant when placed under the supervision of a ten-cent coal heaver. The same principle holds true if applied to pug-mills, brick machines, dry-pans or electric generators. The finest built kiln in the world will balk and produce junk if mistreated and fed only trash instead of good fuel. The fellow who without experience operating continuous kilns undertook to demonstrate that he could at the start get better results than those who had devoted their lifetime to developing and perfecting that type of burning showed that there was a vacuum in the common sense cell of his cranium. His substitution of lumpy, wet slack in place of finely powdered dry coal of the greatest purity for use in top firing produced a smudge in the kiln which the experimental draft failed to remove; yet when he fused the doorways, scarcely "half baked" the kiln centers and turned out a gray, grizzly, variegated mess instead of the desired bright, tint, the kiln was made to shoulder all the blame. Blind experiments with any type of kilns are detrimental to dividends. Not every man in charge of clayworking can hope to become an Orton, a Bleininger, a Richardson or a Lovejoy, but every man charged with responsibility should, when an emergency demands it, instead of blundering on possess sufficient common sense to confess his ignorance and seek from those more experienced and enlightened the solution for his troubles. The best lawyer is not foolhardy enough to attempt to carry all the law in his head; his strength is his ability to know where to find what he wants. The clay man should be equally alert.

A survey of the field will disclose two distinct methods of handling clay plants. One of these is the common sense way; the other for the want of a better name might be denominated the "let-'er-go-Gallager" method. The first named system requires the buildings housing the manufacturing equipment to be kept in decent repair; after every burn of a kiln it is gone over carefully by a competent workman whose duty it is to replace broken floor tile and repair damaged doorways or fire-boxes, crumbling crowns or arches. Warped bag-walls are rebuilt, falling drop-arch tile placed anew, leaky tunnels and ducts given attention, and corrective work done wherever required to prolong the service of the kiln. The common sense factory superintendent has a man fitted for the job in every department. The knock is removed from the big engine even before it appears. The boilers are kept free of scale not only when the inspector is expected, but at all other times. Leaky steam pipes are looked upon as an abomination and mark of neglect. Misfit valves are something to be ashamed of. Boxings and bearings are kept religiously free of rattles and wabbles. Dry-pans, pug-mills, brick machines, cutters, represses, steam shovels or shale planers never wear out, for the reason that when a part breaks or becomes disabled another part is in stock ready to replace it. Dryer cars and dump cars rarely go to the junk pile, since the repair man stands ready with hammer, wrench, punch, rivets and paint to install new bars of iron. Of the electrical equipment it is sufficient to say that an electrician is in charge. The belts and drives are as carefully regulated as were the strings of grandfather's fiddle. The machine and repair shop is a well-ordered, thoroughly equipped institution where competent mechanics and machinists stand ready at any hour of the day to battle with any job thrust upon them. The entire premises present a business-like aspect of order, thrift and decency; common sense crops out at every turn. The common sense clayworking plant is a thoroughly co-ordinated machine with the least possible lost motion. In it the best possible working conditions are maintained, and every consistent effort is made to stem the existing unrestful, dissatisfied trend of labor. At the plant where common sense



Walter Colyer, Albion, Ill.

methods in clayworking hold sway the clean-up man is always on the job. It is always possible even to distinguish brass, nickel or steel of the different parts of the machinery by the mere luster or shine; in fact, instances are on record where clay plants have been operated in such a common sense sort of away that the casual visitor has been able to determine at a glance the color of the paint on the pug-mill. It is the pride of those entrusted with the direction of operations at the brick yard where "horse sense" commands a premium that advantage is taken of every opportunity to introduce better methods and to install improved devices of proven utility. The stacks of manufactured products on the yards or under shed are their own advertisement—thoroughly respectable in appearance. Diligent attention is given to honest culling, assorting and inspection. The common sense superintendent carries about with him a burden of responsibility and feels that his own reputation is at stake in the quality of his goods. His motto is: "The best is scarcely good enough." If given a big order for kiln-run facing brick calling for a perfect mixture of shades and tints, ten chances to one he will wheel the brick from the kiln and stack them in longitudinal tiers in a long, massive pile and then load his cars from the transverse section of the ends. Wearing quality and symmetry will be the goal striven for by the common sense paving brick manufacturer. Scrupulous regard will be had for required tests, and the thought always uppermost in mind will be the remembrance of the fact that inferior quality brick laid in the street are ruinous to the reputation of the best paving material on earth. Common sense dictates the inspection of all clay products on the yard rather than at the works.

But let us also consider the "let-'er-go-Gallager" plan; it has many patrons. The kilns present the appearance of having been in the path of a Texas hurricane. The machine room with its mess of debris, looks like the remnant of an Irish wake. The dryer cars, it is safe to bet, are grievously afflicted with acute jim-jam rickets. If the muller tires, after five or six years of continuous wear without replacement, are worn deeply concave, with occasional goose-egg depressions and two pans are required to do the work of one, then some one cusses the makers for using faulty material. Should the brick machine and pug-mill refuse to functionate and show capacity when knives, blades and wings are worn, the usual procedure is to call in the country saw-mill mechanic and instruct him to operate them with crowbar and sledge. The machines never did work right, anyhow; they weren't built right in the first place. The order would seem to have been given to ram the dryer cars into the tunnels with as much vehemence as the attendant can exert; and should a few hundred jar off, never mind; plenty more can be made. Perchance the dryer covering does leak badly and a few thousand green brick are lost when there is rain—what of it? Isn't there plenty of mud in the pit to make millions more? The motto of the blacksmith shop, sometimes for effect called the machine shop, is: A place for nothing and nothing in its place. Time is too valuable to fool much of it away caring for belts or conveyors. As a matter of fact, if a loose, flapping belt does fly off and dislocate some employe's nose the insurance company will be expected to stand good for the cost of repairs at the hospital. If the employes are dissatisfied with conditions and the way things are run does not suit them, can them; others can be found to take their places, even though the work may be all new to them. The yards, docks and entire plant surroundings, with their wealth of wreckage and ruin, look like a magnified exhibition of the morning after Hallowe'en in a country college town of Indiana. At one of these ramshackle plants common sense ideas are cast to the winds in the handling and shipping of clay products. The mandates of the management are usually: Resort to any means to get by. Culling, grading or any manner of careful inspection of wares is ridiculed as a needless bit of extravagance. If paving blocks are to be delivered on a job it is not so much a question of what they will test or how well they will wear under heavy traffic as it is how to get them accepted in the street. The superintendent of the kind of a plant under discussion will argue that a paver standing only a ten- percent absorption test and a thirty-percent abrasion test is good enough for any purpose; that engineers are at fault in requiring anything more rigid. The "let-'er-go-Gallager" type of a clayworking aggregation is not merely a fanciful sketch of something that does not exist. They are to be located in many places. After an indeterminate period of operation, if common sense is not substituted for foolhardiness, the end comes. It either passes into the hands of a receiver or the crumbling wreckage is mortgaged in an effort to rebuild it.

Vice-President W. E. Dunwody, Macon, Ga.

The present and prospective unsatisfied wide-world call for constructive material offers to the clayworker his long sought opportunity. This should be his incentive to produce greater and better results, and to that end he should employ every grain of commonsense at his command. The present would undeniably seem to be the opportune time for an intelligent, systematic, common-sense effort to renovate and rejuvenate run-down, antiquated and mismanaged plants and prepare for the prospective clayworker's harvest. Efficiency and capacity are closely coupled, and without both of these dividends are likely to be negligible. Where the manufacturing end of the plant is capable of greater production than the dryer and kiln capacity, then common sense proclaims the fact that kiln and dryer capacity should be extended. Where the situation is reversed, then the injunction should be: Add additional units to the manufacturing end in order to match the drying and burning capacity. In cases where the material at hand proves to be unsuited to the requirements of the products manufactured, or the process employed does not conform to the demands of the material, then common sense would advise either a change in the class of products manufactured or the substitution of a better suited process. The Nineteen Twenty Slogan can well be: Common Sense in the Clay Plant. (Applause)

General Discussion.

Secretary Randall: Our First Vice President, W. E. Dunwody, was to lead in the discussion of this paper and he asked for a copy of same, which was sent him some days ago. With his customary thoroughness, Mr. Dunwody went over the paper and wrote out his discussion, which he sent to me as soon as he found he would be unable to be here in person.

DISCUSSION OF PAPER BY WALTER COLYER OF ALBION, ILLINOIS, ON "COMMON OR HORSE SENSE IN THE MANUFACTURE OF CLAY PRODUCTS."

BY W. E. DUNWODY, MACON, GEORGIA.

Mr. President and Gentlemen of the Convention:

Mr. Colyer has discussed very fully and interestingly the subject of "Common Horse Sense in the Manufacture of Clay Products," and I have been unable to notice any statement of his which should give rise to any discussion, and we could probably very properly pass to the next number after endorsing Mr. Colyer's paper and extending our thanks to him, but I may be permitted to add a suggestion or two for your consideration.

In approaching the proposition of the establishment of a brick plant, one of the important things for consideration should be the *Number of Brick Which are Required* in the Territory Under Contemplation, and this amount after being carefully estimated, should be compared with the *capacity of the plants already in operation* in that territory.

Sometimes it happens that the plants already in operation may be enjoying a successful business, but the addition of another plant may be the "Proverbial Straw" which brings about "too Long" division in the business, with the result that *neither plant* has enough business to make success possible.

It is also, under the existing circumstances, well to suggest that in considering the capacity of any plant or plants, that the output of a plant *under present difficulties* is *not a fair criterion* as to its real capacity. In many communities brick companies are very much behind in filling orders, but *not* on account of an abnormal demand, but on account of not being able to operate at full capacity as a result of scarcity of fuel and labor.

One other suggestion occurs to me and that is, that before any plant begins operation, one of the most important things to do is, to fix responsibilities; dividing the operation into Departments and putting each Department under the control of some *definite head*, and at the same time, making that head *responsible* for each Department which has been placed under his supervision.

Responsibility should *govern* authority. Often authority is given without any thought of Responsibility. The man who carries the load of responsibility is helpless without authority, and on the other hand the man who has authority, should be compelled to take responsibility. Our business is a wonderful one, and if we are on good terms with our competitors and co-operate with them, it is also an interesting and pleasant business, so let's cultivate the friendship of our fellow manufacturers and help them in every way that we can, and we will find that they will help us as much as we do them and that our co-operation will make each of us much more efficient and our *business* much more *remunerative*.

There are many suggestions in Mr. Colyer's paper which most of us would find very profitable, and I commend them for your careful consideration.

I will close with the request that I be allowed to give our members through The Clay-Worker, the benefit of the form of a daily report which I have just put in use at our plants, and which has proven very satisfactory and valuable.

This report may seem to some to partake too much of the nature of "red tape," but I have never known any man or men, who knew too much about their business, and this report makes it possible to know each day *what you are doing* and *what it cost you to do it*, and also gives a comparison with the day previous.

This report was made for use in our Cherokee plant where we are operating two Chambers Brothers Chicago Specials in the manufacture of end cut common brick, one E. M. Freese K. C. machine making face brick and one E. M. Freese K. B. machine in the manufacture of one hundred tons hollow building tile daily, but it can be readily changed to fit plants of smaller capacity.

Respectfully submitted,
W. E. Dunwody.

P. S. I enclose herewith forms for the report.

Secretary Randall: The daily report blanks to which Mr. Dunwody refers are quite elaborate; copy will be sent to any of the members desiring same on application to Mr. Dunwody. The form will be given in detail in a subsequent issue of The Clay-Worker, in accordance with his suggestion.

President Hammond: Will you announce the next, Mr. Randall?

Secretary Randall: In going over the program, it has been deemed best to take in their order those who are present and ready to deliver their offerings. The next paper is one connected with the commercial side of the business, "The Marketing of Clay Products," by John L. Rice, Akron, Ohio.

VITRIFIED PIPE SALES PROMOTION.

ADDRESS BY JOHN L. RICE, FIELD COMMISSIONER, VITRIFIED PIPE MANUFACTURERS' ASSOCIATION, AKRON, OHIO.

Mr. President and Gentlemen of the Convention:

I fixed this title to suit myself after your program committee had assigned me to speak on the subject, "Selling Vitrified Pipe." Had they been mean about it and stuck to the original label, they would have had to pick another speaker; for I cheerfully confess that I never sold a foot of vitrified pipe in my life. Yet, I may claim with all due modesty that the Bureau under my direction has been indirectly responsible for the sale of a good many feet, and that a logical extension of the work of the Bureau would pay large dividends to vitrified pipe manufacturers in increased sales.

I am not merely trying to give this address a personal twist, but rather to point out to you an important distinction between sales promotion and actual sales. Somewhat the same distinction has always existed between sales and advertising. The perennial wail of the advertising manager of most concerns is that he can never directly trace the amount of business that he has brought to the firm. The salesman comes in with actual orders and collects an actual commission, and smiles an actual smile in proportion to the number of orders and the amount of the commission, but the advertising manager must gnaw his thumbnail in carping envy and opine—merely opine—that about three-quarters of the salesman's were due to the superiority of HIS advertising, not to any particular display of selling genius.

Now sales promotion is merely an amplification of advertising. It has to do with the preparation of the salesman's field. The sales promoter sows and the salesman reaps. Sales promotion is broader than advertising. When I think of all the various activities into which it has drawn me during the past five or six years, I am tempted to resort to Scriptural language and say that sales promotion "covereth a multitude of sins." On second thought, I won't try to be any more specific; but just let it go at that.

If sales promotion for a private concern is barren of direct results, what shall we say for the same work performed for an Association? Our Association, in common with most other industrial associations, does no direct marketing whatsoever. With me and my Bureau it is a case of everything going out and nothing in the shape of direct profits, coming in. The prime discouragement of association work is that we so frequently seem to be always casting bread upon the waters and that so little of it comes back with our actual label on it. Particularly when some impatient member expresses the opinion that we are shooting in the air and wasting money in a field where no direct return has yet been realized, then is our faith put to the test.

Yet, what gives us persistence is the conviction that our work is to pioneer the field which cannot immediately be made productive. If orders followed at once, there would be no need of an association. The salesman with his pad of order blanks could attend to the whole matter himself and come home with the signatures on the dotted line, as evidence of his pioneering.

Take the case of the vitrified pipe culvert. When I was first trying to demonstrate the worth of such a Bureau to the vitrified pipe industry, it was suggested that I put in some time personally visiting county and state highway officials and presenting the arguments in favor of vitrified pipe as a culvert material. It seems that some of the companies in the association had tried to make it a rule for their traveling salesmen to visit courthouses and pioneer in this manner on the culvert question, but with such barren results that the salesmen shortly gave it up. They came away with no orders, and to them orders were the sole symbols of success. They did not have the vision of what could be accomplished for the industry as a whole by persistent hammering away on such an obstacle as this, or, more accurately speaking, it was not their business to care about the industry-as-a-whole, nor to look for long range results. The industry-as-a-whole was not paying their salaries and if their results came at too long range, it was likely to find them separated from the payroll of their particular company as unprofitable servants.

John L. Rice, Pittsburgh, Pa.

Now the industry-as-a-whole, or a respectable portion of it, was paying my salary and my bosses were fairly well informed of the fact that it might take a season or two or three or four for me to get things properly in motion. At first it was hard, discouraging work. Corrugated iron was pretty well entrenched as a culvert material in the minds of county road authorities, with cast iron holding its own in some of the richer counties, and concrete culverts coming fast everywhere. But I drew many and many a word picture of the vitrified pipe culvert as the ideal culvert—economical, amply strong for all actual traffic strains, and particularly suited to withstand the special test that culvert material must withstand—the test of corrosion. I pointed out the injustice usually done the material in building culverts without headwalls and urged that the joints of the culvert pipe be properly cemented to prevent leakage and frost heaving beneath the line of pipe in freezing weather. By advice of our engineers, I advocated the concrete encased culvert for very heavy duty and was rewarded by seeing the Ohio State Highway Department specify such a culvert as one of its standard installations. Within four years I was gratified in the extreme to see a statement of the pipe culvert construction of the previous year, including all pipe culverts built under the authority of the Ohio Highway Commission and to note that the name of vitrified pipe "led all the rest."

This experience with culverts may interest you as an example of personal sales promotion—the slowest and most laborious method that may be employed and yet one that is vitally necessary to the success of any trade extension program. In our work my assistants and I have made it a business to see everybody in a town who might directly or indirectly influence the market for our product. We would see the highway authorities; the county and city engineers; the health officers; the building commissioner, if there was one; the plumbing inspector; and other plumbers of local influence. To clinch the whole local stiuation, we would see the building supply dealers who were handling our pipe in the locality and try to impress on them the importance of keeping alert to the larger opportunities and to be alert against any official discrimination against us.

This work naturally enlarged itself along legislative lines. Most city health codes or building codes contained restrictions against the use of vitrified pipe, that we deemed unfair, and not a few states enacted building legislation along the same lines. It was not a case where vitrified pipe had been fairly tried and found wanting by impartial users, but simply an evidence of activity on the part of our friends, the enemy—to be more specific, the cast iron pipe interests.

I am obliged to take off my hat to the cast iron fellows as a crowd of most adroit political intriguers. The word "competition" is not in their dictionary. When they find a material that is competing with cast iron, they follow Mr. Dooley's well-known rule and get the enemy disqualified. They are liberal advertisers in trade journals (as we should also be), and they make the most of their advertising patronage in seeking editorial favors. They are deep in the politics of trades and business organizations as well as engineering societies.

Influence acquired by these and other means they have used unsparingly in an attempt to drive vitrified pipe from the house drainage field by means of restrictive legislation. A very large part of my time and energy has been expended in seeking modifications of these restrictions, taking at all times the broad ground that every suitable material should be admitted to competition under specifications which would insure proper selection and installation. Last winter I was in constant attendance at the session of the Legislature in an eastern state where there is a drastic law against vitrified pipe house drainage. This year I have been back again on the same job—all in the hope of securing a repeal or modification of the law. All that I can say is that there is unmistakable progress. In reaching the legislature it has been necessary to permeate the whole state with vitrified gospel; to enlist the co-operation of engineers, plumbers, local officials, commercial bodies, and real estate interests favorable to our cause. So far I can report no actual results; and a single manufacturer, were he paying my salary, would probably have decided the work was unprofitable long ago and would have called me off. But I am allowed to persist because I am not supported by a single factory but a number of them, and because it is through such co-operative effort that these "long range" promotional activities should be carried on. I may not get the desired legislation this year, or the next, or the next; but when it does come it will be a victory well worth while—a precedent for other states and municipalities. Moreover, the educational ground work for getting the legislation will prepare the market to take actual and quick advantage of the new latitude of the law, which will mean thousands of carloads of sales all at the expense of a few years' time, but not much less. I am also working at the present time to stimulate interest in and gain endorsement for a bill to be introduced next year in the state referred to which will create more of a demand for clay products in general, and can report considerable success thus far.

J. Fred Smith, Omaha, Neb.

You have probably gathered by this time just what I mean by personal promotion—the actual face to face encounter with obstacles; the patient talking out of disputed points. I make it a point to attend all professional and trade gatherings whose business bears on the use of vitrified pipe, whether in the municipal, plumbing, or highway fields. If the body of men in question are generally favorable to our material, the task is pleasanter. But if they are unfavorable, the task is more important. I try to get just as close as possible to the inner circle where the fate of materials is decided; to sit on or near committees, even if I know they are hostile. When the present order of business is to pass resolutions and restrictions against vitrified pipe, I want to sit and look the resoluters in the eye while they do it. I find that resolutions are neither so harsh nor so frequent when this treatment is used.

Personal promotion is slow and laborious, but nothing will ever wholly take its place. It is tremendously more effective when supplemented by other lines of activity, such as advertising and technical instruction.

To show how closely these various features of the work are related, I may say that our greatest single mechanical achievement—the solving of the joint question—grew out of a law suit. A manufacturing concern in an Ohio town undertook to install a vitrified pipe building drain and was enjoined by local plumbing authorities. We interested ourselves in the case and assumed part of the financial burden of fighting it to a satisfactory conclusion. In the course of preparing our case, we saw that it would be helpful if we could produce testimony of the unfailing tightness and efficiency of vitrified pipe joints. In the existing state of the art, we were unable to do this. The manufacturer had a young relative of an inventive turn of mind, and he asked him to solve the joint problem. Within a month he had perfected the Flex-Form joint mold and shortly thereafter The Wyatt Engineering Company was launched, with our co-operation, specializing in all questions affecting the installation of vitrified pipe.

The poured joint is coming into increasing use, although far from universal as yet, but its promotional value was immediate. It gave us at once the answer to installation perplexities. When we were taxed with past failures, it was gratifying to be able to say, "But the poured joint eliminates this kind of trouble." As rapidly as possible the old practice of the hand-troweled joint is being eradicated as wasteful and frequently far from impervious. The density of material needed for a tight joint is most certainly secured when gravity does the work of filling the pipe bell. We believe this development to be one of the most important in the history of sewer pipe practice. It has dispelled a large volume of prejudice against the pipe that really should have been directed against faulty joint practice.

It was efficient and it was new. Nine-tenths of the effectiveness of promotional activity, which we all admit has limited the expansion of the clay industry, is due to the fact that it presents so few new phases. It is a staple industry; an industry with a tremendous future, but, in comparison with the electrical industry; the automobile industry; or the concrete industry, it offers very few new topics of conversation. Our concrete friends excel in manufacturing such topics. When you hear about concrete ships, concrete furniture, or maybe concrete airplanes, don't run around the block expecting to see any of these things, but just reflect that it is the ever versatile cement promoter making subjects to talk about. While I would not urge the clay industry to go to the same lengths, I would urge upon you not to overlook the promotional value of any new mechanical development related to the use of your product.

Last, but not least, we come to the subject of printer's ink. I cannot lay before you any marvels of advertising achievement, but I can report some three years' experience with a modest advertising appropriation and can say, truthfully and emphatically, that the vitrified pipe industry never before approached the same position in the minds of the outside public that it assumed after our name and purposes had been familiarized through full page advertisements in the trade journals. Advertising awoke an incessant correspondence with people interested in some feature of vitrified pipe installation. It stimulated new uses and new methods for old uses. It was splendid backing for my assistants and myself and for our engineers when we came in personal contact with officials and engineers on some special mission. Mention of the name of our association rarely failed to bring the answer, "Yes, I have seen your advertising."

The fields for vitrified pipe advertising are varied. It should be constantly presented in municipal and engineering journals with respect to public sewerage. It has a place in every building and architectural journal in order to bring home the excellencies of our pipe for building drainage and private sewerage. The plumbing journals are even more necessary for the exploitation of this purpose.

Then there is the big, relatively untouched field of highway drainage, besides the culvert proposition about which I spoke. The highway of the future will unquestionably be a ditchless highway with enclosed pipe drainage each side of the driveway and frequently having cross underdrainage. The past few weeks has demonstrated more than ever before the need of closed ditches. Between Akron and Cleveland in a single day there were nearly a hundred trucks in the ditch due to the icy pavement. The last winter journeys of army truck trains from Detroit to the seaboard were replete with object lessons of the danger and inconvenience that is caused by deep ditches encroaching closely upon the driving space. Many states are making considerable progress in the way of remedying this evil.

Not only should the open ditch be eliminated from the viewpoint of safety to traffic, but engineers admit that the greatest obstacle to better and more lasting highways is the proposition of water in the sub-bed. We believe that by undertaking, by publicity and engineering research, to produce dry roadbeds under any and all conditions, we build for ourselves a tremendous volume of prestige and profits.

We have an equally important undeveloped field in the rural districts. Prosperous farmers are demanding and getting systems of plumbing exactly like those provided for city residences, which calls for two things that we are prepared to furnish—a private sewer and a septic tank. Septic tanks made of vitrified pipe under our designs are unexcelled both as to model and material. We also co-operate with the agricultural interests to promote larger crops through farm drainage.

All of these fields of advertising have been tentatively entered by our Association with excellent results for the small expenditure made. We have proven to our own satisfaction that there is an endless variety of themes for advertising and publicity related to the use of our material, and we look forward hopefully to an appropriation which shall be only a tiny fraction of the list price of pipe sold, but which will permit us to take page advertisements in every advertising medium of merit in our field.

One phase of promotion that appeals to me, altho I have never done much about it, is that of introducing modern sanitation into a large number of small towns which are without it. This calls for co-operation with other interests, for sewerage cannot be divorced from water supply; but the topic is definitely pigeonholed with some notes and data for the proper time.

We do not restrict our conception of advertising to pages in the trade magazines. We have distributed hundreds of thousands of pamplets dealing with installation question, or with some suggested use of vitrified pipe. Equally important is the matter of presenting our case in the editorial and news columns of journals. This requires no special influence. Journals are glad and willing to accept copy when there is a genuine point to it, and when the subject matter is presented without exaggeration.

I have traced the broad outlines of such work as our Bureau undertakes to do—such work as we hope to see greatly enlarged in the future. The points I wish to emphasize are these:—

1. That an old, staple material ordinarily buried out of sight can be made interesting by the right kind of creative publicity. This applies to other materials possibly suffering from the dry rot of routine and custom.

2. That when you begin to think and talk about a product, you inevitably suggest new uses and new markets that never occured to you before.

3. That the size and stability of the market for any product rests upon a broad foundation of good-will, which cannot be built by one concern and cannot belong to one concern. It is the property of the whole industry, and it is the business of the industry, as a whole, to conserve and enlarge its property.

It takes faith and imagination to work at trade promotion. The worker is denied the stimulus of quick results. Often he gets on a wrong track and spends energy that may prove to be wasted: but in the long run, there is nothing more profitable than this kind of long range, broad guage salesmanship that knows no firms or companies, but plugs ahead with its eye on the future. To all of you who may be facing a declining market or may be certain that your own could be greatly expanded, I say get together; co-operate; forget rivalries; but select some competent sales promoter, give him the facilities and the backing and leave him to work out your salvation and his own. (Applause.)

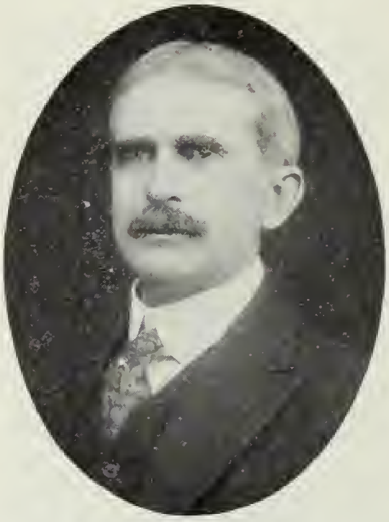
General Discussion.

President Hammond: The chair recognizes Mr. Wilson, who is to lead in the discussion of this paper, but the chair desires the opportunity to speak for just a moment on the rows of forward looking young men who came to us this morning from the Ceramic Department of the Ohio University, whose classes have been dismissed for the day, to give these young men an opportunity to come here and assist our sessions by their presence, and in the hope that we may impart to them some of the enthusiasm which we as workers in clay feel for our business. Gentlemen, you are very welcome, and we trust the benefits which you receive may be many, and your memory of these sessions will carry you forward through your life and afford you very great benefit. (Applause.) Now, Mr. Wilson, may we hear from you?

Thomas E. Wilson: Mr. Chairman, I had forgotten until just a moment ago that I was to take part in any of this discussion. I think Mr. Rice told pretty nearly everything that could be said on this subject. Right now the most necessary thing in order to market clay products is to get them made. It is not difficult to market brick, tile or sewer pipe, so long as you have them to sell. The great difficulty is finding labor and transportation service in order to market your product. As I understand the subject, it is intended to mean that for average times and normal conditions. I think Mr. Rice conceded the best way to market any clay product is to create a demand for it. I am sure we will all agree to that. If there is a demand for the product that we are manufacturing and have for sale, there will not be much trouble getting it on the market. But until that demand is secured, it will be very diffcult and take an expert salesman to go around and procure orders for material. This matter of advertising is conceded to be the practical way of getting the material before the public and creating a demand for it. I do not believe it is good policy to run down other material that comes in competition with clay products. For instance, we hear people say a frame house is no good and it requires painting so often and there are a great many objections to it, and we will attempt to point out some of the objections. Now there are places where lumber is absolutely necessary and instead of saying that lumber should not be used at all in building, we can show them how much better brick appears in a building.

The Abiding Charm of a Brick House.

One of our advertisers, I noticed the other day in one of the pamphlets published, had an ad. reading like this: "The abiding charm of a house of brick." That is a beautiful expression and is true. The more you stop to look at a brick house, I mean especially if they are not all of one color, you see the charm of each individual brick, and it is an abiding charm—the beauty that is brought out by the architect by the construction of a brick building. It is so much more beautiful than any frame house. We get the advertisements showing the beauty of a brick house, like we had illustrated here the other night, when Mr. Cary showed us buildings which had stood for three or four hundred years, in as good preservation as in the year they were built. Why that kind of advertising showing the beauty of brick and its durability and doing away with that painting that a frame house requires at least every three years, is going to create a demand for brick buildings and the use of brick, and that demand, I think, will be kept up so there will always be a shortage of brick in this country. If that condition prevails, the demand exceeding the supply, we will have no trouble in getting the material marketed. There is no question that clay products of every kind have their use. There is no question about the desirability of sewer pipe; no question about hollow tile; it has its place, for interior walls, and for partitions it has advantages over brick. We have to admit these advantages; have to admit their uses, and simply create a greater demand for vitrified clay products, as I have stated, because of their advantages, and because of their durability, and because of economy. At the present time you can build a brick house just as cheap as you can out of any other material. Any architect will give you bids showing that you can build an ordinary brick house



Vice-President Thomas E. Wilson, Pittsburgh, Pa.

just as cheap as you can a frame house, and have the advantage of not having so much upkeep in the years to come. I do not know there is anything further to say on this subject except the things I believe should be done are now being done by the different organizations. The face brick people, the paving brick people, the sewer pipe people, the Common Brick Association are all advertising the advantages of burned clay products, and I believe the demand is going to be increased in all these particular lines. The question will be, "How are we going to find the material?" (Applause.)

Will P. Blair: I would like to add a word in connection with that paper. I have kept in very close touch with the activities of Mr. Rice for several years. The story as set forth in that paper and particularly in respect to this prestige that is placed in the public mind by every one of these activities that have been detailed by Mr. Rice, and that once placed there, is scarcely possible to remove, and it has this advantage. I think at this time this should be kept in mind by the entire clay industry, as scarcely a speaker has said anything upon the current conditions but that he has spoken almost unfair to himself, that he is just now secure because the market is good and we have a place to put every single piece of goods we manufacture. But I have a picture in my mind. Just three or four years ago, in pre-war times, in the city of Cleveland, one of our daily papers took an entire front page to say to the people in that community that 60,000 people were out of employment in the city of Cleveland. That meant at that time none of our goods were being used, and they were a drug upon the market. We are not always going to sail in the ship in which we are now riding. We have got to lay the foundation, and we have got to maintain the prestige that seems to be in our business at present. We cannot do it in any other way except the way that has been opened up by Mr. Rice—the little activity here and there, the placing, with perfect security in the public mind, the advantages of his material. We have a future to look forward to as well as for our breakfast tomorrow morning.

Vice-President R. C. Burton, Zanesville, Ohio.

President Hammond: Does any other gentleman wish to speak on this subject? We have enough there to occupy our minds for some time, following out Mr. Wilson's admirable rejoinder to Mr. Rice, followed by the very clear and cogent expressions of Mr. Blair. It is fitting for me to take at this time the opportunity to tell of the love of a man for his business, his clay business, the manufacture of brick. Between one and two o'clock this morning I met Mr. Bailey, of Springfield, Mass., whom you all know. He said: "I want to show you something," and he led me into his room. He said: "I have been down to Cincinnati and have just returned, and this is what I have been to see. This is a picture of a completed building, for which I furnished the Harvard brick, to construct an educational institution where 1,600 pupils will stay, or be accommodated, and I felt impressed when I looked upon that structure in which were the brick which I had made in New Hampshire. They will stay there when I have long since passed away. None may know, perhaps, that I produced them. I am an old man, approaching an old man's time, but I feel there will be a monument. I love my business." So I would just like to lecture our young men from the University again, and say,

> "Honor and fame from no condition rise,
> Act well your part, therein the honor lies."

(Applause.)

Your eyes are so much better than mine, Mr. Secretary. Will you please announce the next?

Secretary Randall: We are skipping No. 6 on the program. Mr. Ryttenberg, who was to have presented a paper on "The Brick Market," is not present yet. He may come in tomorrow. The next is an impromptu address by our new Third Vice-President, R. C. Burton, of Zanesville, Ohio, and will be illustrated by views of plants in various sections of the country, some local plants and some from distant points.

President Hammond: While you are getting adjusted and Mr. Burton and the lantern man are getting ready, I will announce the Committee on Resolutions, which has been appointed.

Committee on Resolutions.

Will P. Blair, Cleveland, Ohio.
A. E. Davis, Indianapolis, Ind.
J. Fred Smith, Omaha, Neb.
Wm. Hammerschmidt, Lombard, Ill.
T. B. Freeman, Pittsburgh, Pa.
Ross C. Purdy, Buffalo, N. Y.
George M. Norwood, Goldsboro, N. C.
J. H. Miller, Washington, D. C.

PLANT EQUIPMENT.

General Discussion.

Mr. R. C. Burton: Mr. Chairman and Members of the Convention—Plant equipment covers a good deal of territory and I am not going to assume to tell you gentlemen how to equip your plant. I have been through it from start to finish for thirty-eight years. I commenced making brick by hand molding, using the alluvial deposit from the top of the hills. Within ten years time I ran out of clay and there was only one thing left for me to do and that was to make brick out of shale or find some other occupation. Imagine my predicament. We did not then have the necessary machinery for reducing the shale so it could be worked by hand, but had to commence experimenting with different machines to get satisfactory results, and I believe that the beginning of the shale industry had more to do with establishing the Ceramic Department at Ohio State University than any other one occupation. It was our representative of Muskingum County, that introduced a bill and had it enacted, establishing the Ceramic Department at the State University. I believe Ohio took the lead in that particular branch and in my mind no better state could have been selected for starting the Ceramic School than Ohio, as we have, I believe, greater variety of clays here and unlimited quantities of coal, oil and gas, which will always insure ample fuel for taking care of our clay manufacturing industries.

Introducing the machinery into plants for working the shale, which is now almost universal, did not arise to its high point of perfection without many failures, and much loss to both the manufacturers of the machinery and the brick manufacturer, but I believe now, that may of our reputable brick machinery manufacturing concerns are able to equip any plant with the best machinery known in the world for making brick, but my advice is that no one should attempt to enter into the manufacture of brick without first having consulted our chemists and ceramic experts and mechanical engineers, as the labor situation of today is going to demand the very best care on the part of the brick manufacturer to eliminate unnecessary expense, and proper engineering, with the aid of our clay experts, now enable those going into the business to profit by much of the loss encountered in the past. The scarcity of labor is going to demand that we do give the matter of plant arrangement and equipment our very best attention.

We today are confronted with the labor problem and no part of the country is exempt from shortage of labor. There is one thing that can be said of the workman of the United States, he is almost a natural expert for almost anything we would want to start in. This was pretty clearly demonstrated when we sent our boys "Over There," and these men now are going to get higher wages, and common labor will be treated more along the lines of experts than ever before, and we must prepare our plants to get the very best production out of our labor and pay them accordingly. All this must be done in order to hold the price of brick down where it will be a competitive commodity with other building materials, so I want to emphasize strongly that professional advice is going to be needed more than ever in the future, if we are going to make a success out of the brick manufacturing business, that we anticipate. I know from personal experience, that I have spent thousands of dollars in the past, experimenting without knowing what I was doing, and believe if I had had the assistance that the ceramic engineers can give us today I would have been much further along in the clay working industry.

In manufacturing brick from shale, we had to leave the old style of making brick, the soft mud process, behind us. We now, first must blast the shale down, then use steam shovels for excavating, crushing outfits to prepare it before it goes into the dry pans, then storage houses should be used to take care of surplus production to keep the plants running in bad weather when the steam shovel cannot be used, all of which necessitates the best of engineering. The next step is to adjust the machinery for taking care of the prepared clay, through the pug mill, the brick machine, cutting device, delivery belt, then the care of having the brick properly placed on the dryer cars and giving these cars proper handling into the dryer where the least amount of labor will be required in moving them.

In drying we should aim to conserve every unit of heat possible, wasted heat from burning brick and cooling kilns. This one item alone should tax every brick maker's wits since the price of fuel has so greatly advanced in the last few years

Burning.

We brick makers are all going to demand of our ceramic engineers, a process of converting our coal into gas, and the field today is ripe for the very best device that can be produced, as we will not only get better tonnage from our heat, but an enormous saving of labor in handling coal around our periodical kilns will have been saved. Of course this question will invite severe criticism, but I firmly believe we will all be benefitted when a system of burning brick by gas can be standardized and at no great expense.

Labor Required in Brick Plants.

Another element which enters into brick manufacturing today is the workman. I believe we are all overlooking one important matter, and that is we do not get closer to our workmen, and educate them to be brick manufacturers. In the past the brickyard workman has not always been classed on an average as high as skilled workmen in any other manufacturing industry, but I believe today, more than ever, we are going to demand brains and better workmanship and when we arrive at that conclusion we can afford to pay better wages, and keep our better classes of workmen with us. The future is going to demand more building material all the time, and the clay and shale is one commodity used in building that can be found almost anywhere on the globe, and can be put into buildings in many places, possibly cheaper than either cement or lumber. Therefore, the educating of workmen in the future for brick manufacturing should be given more attention. It is not an uncommon thing today for us to see our very best workmen leave and go into other lines of business, instead of staying with the brick industry, and for that reason we should attempt to make the manufacturing of brick more attractive to our workmen.

As an example of what I am speaking about, not long ago an agent came through our works and looking over the men, picked out a good bright young fellow, stating he could make a carpenter out of that fellow without the least bit of trouble. He put him on carpentry work at standard wages, at that time of $7.20 per day, and the fellow got along with it all right, although he never spent a moment's time studying to be a carpenter, so I am thoroughly convinced we ought to be with our workmen more, and educate them, and teach them that the manufacturing of brick is just as wholesome and profitable as any other line of work.

I read recently an account of three concerns in the United States, who had never had strikes, they were The Baldwin Locomotive Works, The Diston Saw Works and The Endicott Shoe Co., and the reasons given were the presidents of these three different concerns worked with their workmen, inspiring them with the ideas that these different concerns were all the very best of their lines in the country. I learned the third generation of the owners of these establishments were now working right down at the bottom with the men, there getting at the very beginning of the manufacture of their various products, and I can readily understand how the men naturally would expect and get the very best attention, care and wages from men taking that interest in their business. I have also learned that one of these concerns was offered five million dollars more for their plant than they valued it at, but they would not accept the proposition, fearing that the income of the plant would be exploited in paying dividends on watered stock, and their workmen would not get the treatment that had always been accorded them in the past. This, gentlemen, is a good reason alone why these concerns would never have strikes.

A. J. Dunn, Columbus, Ohio,
Chairman Local Finance Committee.

Co-Operation Among Brick Makers.

I have always thought there should be a better feeling among brick makers than usually exists, especially when competition becomes keen, and I am afraid we have all deviated from the straight and narrow path in times of stringency of brick orders. However, the prosperity of the brick business seems assured for a long time to come, and there is no reason why we should not all enjoy a prosperous period. Surely the lot of the brick manufacturer in the years goneby has not been most encouraging, and instead of backing each other up and holding our prices up where they belonged, we have all been too apt to try to undersell the other fellow. In going through California I had an object lesson. About every other fellow I met there was a real estate man, and I talked with a great many of them, and I do not believe that I can recall a single instance where one real estate man had knocked another one, but whenever a good sale of real estate was made the agent that pulled off the deal was commended for his honesty and integrity. I never saw a bunch of fellows boost each other like those real estate men out in California, and I think if the brickmakers would get out and boost each other it would help the business more than we have any idea of.

The Crying Need Is More Bricklayers.

I believe we should encourage the production of more bricklayers. Lumber is getting scarcer, and cement does not afford the varity of ornamentation that bricks do, and with the facilities we have today for making brick, and making more brick, in my mind is going to make the demand for more bricklayers than we have in the United States, and I believe we should cooperate with the bricklayers' societies and have the number of bricklayers increased. This can be done by co-operating with their societies, and encouraging them to see this in the same light that we do. I believe the present rate of teaching a boy to lay brick is about one in twenty bricklayers. By having more bricklayers I believe would be a great encouragement for more brick buildings. I want to commend the bricklayers unions for the intelligence, and loyalty they have for their societies. I only wish brickmakers would stand together, for the union bricklayers get together and stay together. I think it takes three years today for a bricklayer to learn the trade, but a boy can go out with a saw and hatchet and learn the carpentry trade in three hours, so I believe that one of the essentials for plant equipment is the teaching of more young men to lay brick. It is a healthy occupation, and bricklayers wages will always be good, and they rank along with other occupations. In making this statement with reference to wanting more bricklayers, there is no intent to offend the bricklayers organizations, and I do not think any other brickmakers have any ideas of that sort, but we want to make more brick, and we want to see enough bricklayers to take care of the business, and make the brick business the most important of all building materials. The comparison between brick, cement and lumber as exhibited here on the table was not encouraging, either for the bricklayer or the brick manufacturer, so I firmly believe that the more mechanics we have for taking care of clay products the more clay products will be demanded, and I believe we have a right to anticipate greater things for the brick industry in the future, and when we once realize our station in the United States as compared with other countries we should prepare to do more business. It has been stated that we are about 5 percent of the population of the globe, 5 percent of the area of the globe. We have about one-half the railroad mileage of the world, forty percent of the capital of the world, producing seventy-six percent of the corn, seventy-two percent of the oil, seventy percent of cotton, fifty-nine percent of copper, forty-four percent of coal, forty percent of iron, thirty-five percent of tobacco, twenty-six percent of wheat and twenty-one percent of gold. All this should stimulate us brick-makers to prepare for big things, as we have the clay and shale which is the greatest commodity in the United States today, and we are going to use it as we should and we will get more bricklayers to do these greater things in the future.

W. T. Mathews, Columbus, Ohio,
Secretary Local Committee.

The Necessity for Co-Operation.

I wish to digress to commend Col. Orton for the splendid paper he gave us yesterday afternoon, and when he talked of the old school books which used to teach many good things, I imagined he was referring to McGuffey's old readers, and when he was pleading for us all to stick together and pull together, he brought to my mind the old story in the old second reader, where the father asked each of his seven sons to bring to him at a given hour, a hickory withe of certain dimension. Each of the seven sons brought the withe and the father bound the seven withes all closely together, then passed them down along the line asking each boy to break the bond, which they could not do. Then the father cut the cords that bound the withes, giving each boy one and asking if he could break it, which they had no trouble in doing. The lesson that the father was teaching those boys was, as long as they stood together and was bound together in all their affairs nothing could ever prevail against them for injury. And, I think this is the thought that Secretary Randall had when he said for us all to stick together and pull together, and when I saw the tree flashed on the screen yesterday and its heavy limbs and branches representing the various societies of clay working industries, all a part of the mother tree, I thought we could take a lesson from that, that the tree representing this great organization could easily be destroyed by having these heavy limbs torn asunder.

The N. B. M. A. in its thiry-four years of existence and the hard work that has been put in by Secretary Randall and the various presidents on down the line, has made this organization a wonderful help to the clayworking industries of the United States, and I for one, want to see the continuation of the fellowship and counsel for all time to come, and I hope nothing is going to prevent us from continuing our happy relations.

I thank you for your indulgence.

BRICKYARD PICTURES.

Mr. Burton: I have had no opportunity of going over these slides which, no doubt, are very interesting views of the plants of the Claycraft Brick and Clay Company at Shawnee, so I will ask Mr. Mathews of that company to tell you about them.

W. T. Mathews, Columbus: The first picture is a pretty scene, and shows our president, W. H. Hoagland, hard at work at our camp down at Shawnee. You will notice Mr. Hoagland is very much at ease enjoying a summer siesta, as it were. We have a coal mine which is about 180 feet deep, and beneath the coal we get the buff clay for our front brick.

(Many views of the plants were shown, including pictures of the machinery dryers, kilns and stock sheds, etc., some of which are shown on the accompanying page.)

Mr. Eisenhart: I notice that some of the brick have holes in them. What is the object?

Mr. Mathews: The chief purpose is to reduce the weight, which makes the freight charge much lower than if the brick were solid. For instance we raised the price $2.00 a thousand, and a New York customer told me it made a difference of only 6 cents. That is, there was a saving of $1.94 in freight.

President Hammond: Don't you have a great deal of breakage on account of those holes?

Mr. Mathews: No, none at all, and we would not now make our brick without holes. The holes are an inch and a quarter.

Mr. Eisenhart: Do you burn with gas?

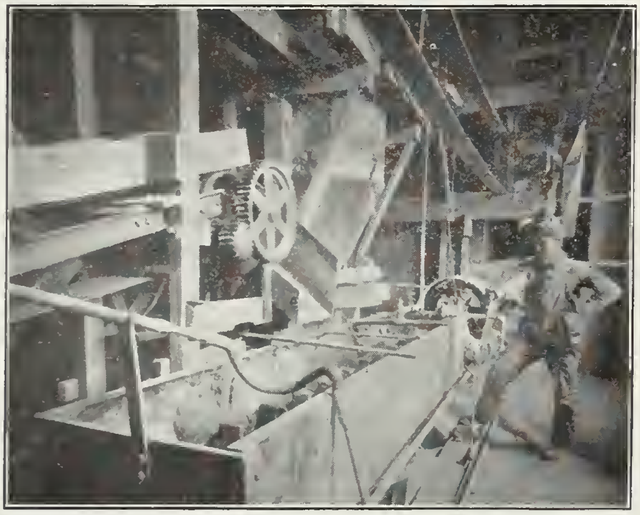
Mr. Mathews: Yes, we use gas producer.

Mr. Burton: Our good friend, Mr. Cahoon, of the Salt Lake Pressed Brick Company, has some interesting pictures of his plant, which will be thrown on the screen and Mr.

Views of Brick Plants of the Clay Craft Brick and Mining Co.

Unloading a Car of Clay.

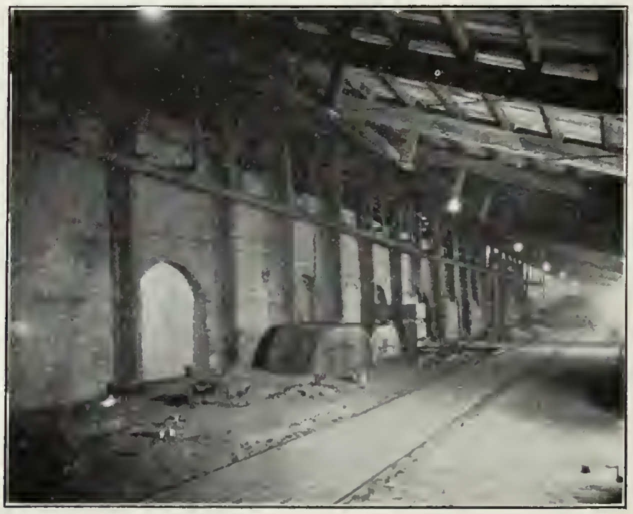
Putting Brick in the Dryer.



The Pug Mill.

Setting Brick in the Kiln.

The Cutting Table.



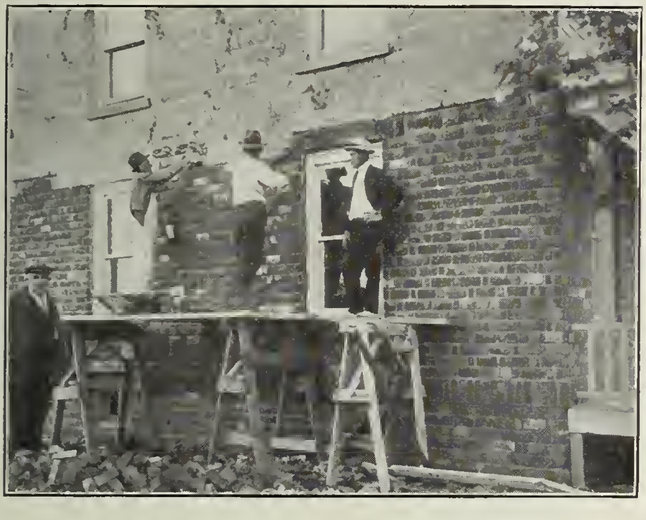
Side View of Continuous Kiln.

Cahoon can answer any question you care to put to him. (The pictures proved very interesting, and will be reproduced in the proceedings later on.)

Mr. Cahoon: We make common building brick and face brick, the latter by the dry press process, using a Boyd machine. Our total capacity is 200,000 per day. We use labor saving devices wherever we can. Some years ago we installed a brick setter which handles the brick in quantity. The setter takes the brick into the kiln, and after they are burned takes them, out and dumps them in cars or deposits them in storage sheds as occasion requires. We burn in continous kilns very satisfactorily. We have an inexhaustible supply of clay and expect to continue in business for many years to come. If any of you can come to Salt Lake City, and pay us a visit, at any time we will be very glad to have you do so. (Applause)

President Hammond: These pictures have been very interesting. We are under obligations to Mr. Cahoon and Mr. Mathews and the others who have entertained us so nicely. What is next in order, Mr. Secretary?

Secretary Randall: We now have another treat in the picture line, an illustrated address by Jay Clark, of Indianapolis. When war was declared Mr. Clark left the United States Encaustic Tile Works, with which he had been associated for many years, and joined the Y. M. C. A. forces. He was sent to Russia where he remained for many months. The pictures which he will show, he took himself. (Mr. Clark read a very interesting paper which will be given in full with the illustrations in a subsequent issue.)



Surfacing a Concrete Block House With Brick.

President Hammond: We will next hear from Mr. Ellis Lovejoy of Columbus, who has made several trips to Alaska, and has a large number of very interesting pictures of that wonderful country of which most of us know so little.

Alaska as Seen Through a Clay-Worker's Camera.

Ellis Lovejoy, Columbus, Ohio: Our secretary put me on the program without my consent, otherwise he would not have gotten me. (Laughter.) He wrote suggesting that following the paper on "Clay and Clay Products of the Far Northwest," I could tell you about the clayworking factories of Alaska. I replied, that was easy. There is only one plant in all Alaska, although that country is so large, that if we were to lay it over the United States, it would lap over into the ocean on both sides. A man who had been reading the report of the "Bureau of Mines," came to see me about building a yard at Fairbanks in the State of Alaska. He explained the condition which we all know, the ground is frozen to an unknown depth—100 or 150 feet. In the search for gold every inch of the ground is thawed. This man wanted to operate a plant in the winter, because all the prospectors come into the town and loaf around, and they wanted to give them work. I picked out a few of my slides which I thought would interest you made from pictures I have taken in my trips to Alaska.

Secretary Randall: I understand our good friend, Jotham Post of Glenhead, Long Island, has a picture or two to show us.

A Concrete Block House Refaced With Brick.

Jotham Post: I recently sent the secretary some photographs of a house in my vicinity built of concrete block. The house proved so damp, owing to absorptive qualities of the concrete block that no one would live in it. It stood vacant for a number of years. Finally a bricklayer and contractor bought it. He bought brick from me and veneered the house outside with hard brick. This cured the trouble and made a very nice looking house of it.

Elisha K. Kane: In refacing the concrete block building with brick, how were the brick anchored?

Mr. Post: The brick were laid against the concrete. I think the mortar formed the tie or bond.

Making a Wet Concrete Block House "Dry."

Secretary Randall: President Hammond wanted you to again look at the slide of the Clayworkers' Tree of Knowledge. That is the reason that slide was again thrown on the screen. As the finishing touch to these pictures I have included a slide giving a quotation of the American Clay Magazine, which I think you may all study carefully. Indeed, you would do well to memorize it.

I Am A Brick.

I am the oldest successful building material devised by man.

I am permanent. I resist fire. I retard the cold in winter, and impede the heat in summer.

My use is economical, for I require no upkeep.

I reduce insurance premiums, because statistics prove that I am safe.

My permanent character is such that I am impervious to the destructive influences that disintegrate other building materials.

I am beautiful because I am supplied in a variety of colors so as to fill every architectural need.—American Clay Magazine.

Vice-President Burton in the Chair: I am sure we have all enjoyed these pictures. I will ask Mr. Randall to announce the next number.

Secretary Randall: This really finishes our program for the morning. We have other treats in store for you, and I hope you will not linger in the lobby in the morning, but will come into the convention hall promptly. The men who have missed these papers and illustrations this morning have missed a real treat. They are the losers. This afternoon we are to go to the University. Colonel Orton has charge of this trip and can tell you about it.

Vice-President Burton: We certainly are obliged to these gentlemen who have shown us these fine pictures, and who have contributed to our program. Colonel Orton, will you kindly make the announcement relative to the trip to the University this afternoon.

Colonel Orton: The plan is to leave the University this afternoon, and proceed in automobiles to the University. The grounds are quite large, there are so many buildings that it is impossible for you to get out and get into all of them. You will be driven into one entrance and through the grounds, then we will wind up this itinerary at the School of Mines Building, in which the Ceramic Department is located, Lord Hall. There you will disembark and proceed to the building under the guidance of the Director of the School of Mines, Prof. R. T. Stull, and the Director of the Ceramic Department, Prof. A. S. Watts. They will be on hand to show you what they have in the way of apparatus equipment and methods so far as it is possible to see them. It is the plan to spend about three-fourths of an hour at the building before the automobiles will be ready to return. Those desiring to spend a longer time will find a group of assistants there only too anxious to entertain you as long as you wish to stay. Several cars will be sent over to the Athletic Club for any of the ladies who may desire to make the trip.

Vice-President Burton: If there is nothing else to be considered now we will stand adjourned.

(Editor's Note.—Some of the papers are withheld for revision, making it necessary to defer the publication of the balance of the report until the next issue of The Clay-Worker, in which will also be given the report of the banquet.)

NUMERICAL ROSTER N. B. M. A., COLUMBUS 1920

NAME FIRM TOWN

1. F. SALMEN, Salmen Brick & Lumber Co., Slidell, La.
2. J. P. CAHOON, Salt Lake Pressed Br. Co., Salt Lake City, Ut.
3. JOTHAM POST, East Williston, L. I.
4. RALPH P. STODDARD, Common Br. Assn., Chicago, Ill.
5. WM. SCHLAKE, Illinois Brick Co., Chicago, Ill.
6. M. H. DONNELLY, The Donnelly Br. Co., New Britain, Conn.
7. JAMES E. RANDALL, The Clay-Worker, Indianapolis, Ind.
8. J. C. ROBINSON, Clay Products Corp., Hampton, Va.
9. H. R. GARDEN, Salem Brick Co., Salem, Va.
10. R. W. PAYNE, R. W. Payne & Sons, Drakes Branch, Va.
11. THEO. A. RANDALL, Sec'y N. B. M. A., Indianapolis, Ind.
12. R. O. CLARK, East Berlin, Conn.
13. TOM W. GREEN, Tom Green Brick Co., Sioux City, Ia.
14. JOHN T. HUMMERT, Gem City Brick Co., Quincy, Ill.
15. GEO. H. CLIPPERT, G. H. C. & Bro. Brick Co., Detroit, Mich.
16. JOSEPH T. BYRNE, J. T. Byrne Estate, Philadelphia, Pa.
17. EARL F. HILLER, Main Belting Co., Philadelphia, Pa.
18. WILLIAM CONWAY, JR., Wm. Conway, Philadelphia, Pa.
19. WM. HAMMERSCHMIDT, Lombard B. & T. Co., Lombard, Ill.
20. RAYMOND T. WILBER, Springfield Cham. of Com., Springfield, Mass.
21. GEORGE W. KELLER, Brown Inst. Co., Philadelphia, Pa.
22. G. L. CLAPPER, Brown Inst. Co., Philadelphia, Pa.
23. O. L. LARSON, Brown Inst. Co, Philadelphia, Pa.
24. H. D. BARGER, Hocking Valley Brick Co., Columbus, O.
25. J. FRED SMITH, Smith Brick Co., Omaha, Neb.
26. H. H. F. WATERMAN, Building Brick Mfg. Co., Hooper, Neb.
27. GEO. M. KRICK, Krick Tyndall Co., Decatur, Ind.
28. WARREN W. GRIFFIS, Baltimore Brick Co., Baltimore, Md.
29. WM. T. MATHEWS, Claycraft M. & Br. Co., Columbus, O.
30. G. G. COWMAN, Claycraft M. & Br. Co., Worthington, O.
31. W. S. GOODRICH, W. S. Goodrich Works, Epping, N. H.
32. JOHN J. SCHULTE, Celina Brick Co., Celina, O.
33. ALBERT M. SCHULTE, Celina Brick Co., Celina, O.
34. W. C. ALWINE, Alwine Bros. Brick Co., New Oxford, Pa.
35. D. M. MOOCHI, Riverside Brick Co., Charlotte, N. C.
36. ED. W. DOW, The Stevenson Co., Wellsville, O.
37. S. KELLY, Arbuckle & Co., Rushville, Ind.
38. T. J. NEISWANGER, Standard Clay Prod. Co., Oskaloosa, Ia.
39. WILLIAM CONWAY, Wm. Conway Co., Philadelphia, Pa.
40. L. D. WALRATH, Acme Shale Brick Co., Buffalo, N. Y.
41. J. F. REYNOLDS, I. L. Stiles & Son Co., No. Haven, Conn.
42. GEO. A. PARRY, Parry Brick Co., Boston, Mass.
43. HUBERT SOMERS, Somers Brick Co., Atlantic City, N. J.
44. JOHN H. MILLER, Wash. Br. & T. C. Co., Washington, D. C.
45. W. T. BLACKBURN, Dunn Wire Cut Lug Br. Co., Paris, Ill.
46. GEO. M. NORWOOD, G. M. Norwood Br. Co., Goldsboro, N. C.
47. WM. K. HAMMOND, Wm. K. Hammond, New York, N. Y.
48. EDW C. CARLYLE, The Carlyle-Labold Co., Portsmouth, O.
49. W. B. POTTS, Columbus, O.
50. H. H. ROSENBERG, Brick & Clay Record, Chicago, Ill.
51. L. PERRY WEST, West Bros. Brick Co., Washington. D. C.
52. M. C. VIELE, North Adams Brick Co., North Adams, Mass.

NAME FIRM TOWN

53. H. D. CALLAHAN, Dominion Fire Brick & Clay Products., Moose Jaw, Sask., Can.
54. DAVID M. WISELEY, New England Br. Co., Boston, Mass.
55. COLONEL EDWARD ORTON, JR., Columbus, O.
56. ROBERT TAYLOR, JR., Hocking Val. Prod. Co., Columbus, O.
57. CHAS. J. ANDERSON, Marinette Iron Wks., Marinette, Wis.
58. FRANK B. LAMBERT, Ills. Brick Co., Chicago, Ill.
59. J. E. MORRISEY, Cl. Bldrs. Sup. & Br. Co., Cleveland, O.
60. H. W. CONWAY, Cl. Bldrs. Sup. & Br. Co., Cleveland, O.
61. E. P. OGDEN, J. B. Owens Con. Tun. Kiln Co., Pittsburgh, Pa.
62. WARREN H. DUNN, J. B. Owens Con. Tun. Kiln Co., Pittsburgh, Pa.
63. J. B. OWENS, J. B. Owens Con. Tun. Kiln Co., Pittsburgh, Pa.
64. C. L. RORICK, Permanent Bldg. Bureau, Chicago, Ill.
65. THOS. R. PREECE, Internat. Br'layers Un., Indianapolis, Ind.
66. CLARENCE J. WEBER, National Brick Co., Chicago, Ill.
67. C. H. ALSIP, Calumet Brick Co., Chicago, Ill.
68. H. C. KLEYMEYER, Standard Br. Mfg. Co., Evansville, Ind.
69. CARL B. HARROP, Ohio State Univ., Columbus, O.
70. L. S. COLLINS, Los Angeles Brick Co., Los Angeles, Cal.
71. A. J. DUNN, Chase Fdry. & Mfg. Co., Columbus, O.
72. S. M. CHASE, Chase Fdry. & Mfg. Co., Columbus, O.
73. W. F. KELLEY, Armstrong Cork & Insul. Co., Pittsburgh, Pa.
74. W. D. RICHARDSON, Ceramic Sup. & Con. Co., Columbus, O.
75. W. L. BOWERS, Ceramic Sup. & Con. Co., Columbus, O.
76. W. N. CARY, Cary Brick Co., Albany, N. Y.
77. M. M. MINTER, Flint River Brick Co., Albany, Ga.
78. J. A. NAGLE, The Brunt Tile & Por. Co., Columbus, O.
79. H. W. BROWN, Amer. Clay Mach. Co., Bucyrus, O.
80. G. R. HESS, E. M. Freese & Co., Galion, O.
81. E. L. HESS, E. M. Freese & Co., Galion, O.
82. RUFUS P. MORTON, Rufus P. Morton, Princeton, Minn.
83. J. F. CHAMBERS, Fate-Root-Heath Co., Crestline, O.
84. GEO. H. UHLER, Marion, O.
85. T. W. GARVE, Franklin Brick & Tile Co., Columbus, O.
86. D. C. WARD, John H. Ward & Sons, Pittsburgh, Pa.
87. C. P. MERTENS, American Equipment Co., Chicago, Ill.
88. J. M. PURCELL, Duffney Brick Co., Mechanicsville, N. Y.
89. E. C. SHIMER, Lehigh Brick Works, Allentown, Pa.
90. CHAS. F. CLIPPERT, G. H. Clippert & Bro., Detroit, Mich.
91. F. B. DUNN, Dunn Wire-Cut-Lug Brick Co., Conneaut, O.
92. E. S. NEWCOMB, Chas. Engelhard, New York, N. Y.
93. L. D. BINYON, S. S. Kimbell Brick Co., Chicago, Ill.
94. ELLIS LOVEJOY, Columbus, O.
95. F. R. CARTER, Peoria Brick & Tile Co., Peoria, Ill.
96. WM. C. PERKINS, East. Pav. Br. Mfr. Assn., Philadelphia.
97. MARTIN S. BECKER, B. P. B. & Mfg. Co., Brookhaven, Miss.
98. SAMUEL P. BAIRD, Columbus, O.
99. A. F. KLEYMEYER, W. Pt. Br. & Shale Co., West Point, Ky.
100. MARTIN S. BECKER, Brookhaven, Miss.
101. R. C. PENFIELD, Amer. Clay Mach. Co., New York, N. Y.
102. L. W. PENFIELD, Amer. Clay Mach., Co., Willoughby, O.

NAME FIRM TOWN

103. F. L. HOPLEY, Amer. Clay Mach. Co., Bucyrus, O.
104. DAVIS BROWN, Amer. Clay Mach. Co., Bucyrus, O.
105. C. B. SHARER, Amer. Clay Mach. Co., Bucyrus, O.
106. R. O. PERROTT, Amer. Clay Mach. Co., Bucyrus, O.
107. W. H. CRUME, Trimble Pav. Br. Co., Dayton, O.
108. E. I. HOWARD, Col. Fire & Face Br. Co., Columbus, O.
109. D. KNICKERBOCKER BOYD, Boyd, Abel & Gugert, Philadelphia, Pa.
110. H. P. JENKS, Hook Patent Kiln Co., Columbus, O.
111. HENRY WEBSTER, Henry Webster & Sons, Newport, Ky.
112. HARRY L. BUCKLEY, Cincinnati, O.
113. ROBERT LOVE, Onondaga Br. & T. Corp., Syracuse, N. Y.
114. F. C. VAN ESELTINE, Merrick Brick Co., Syracuse, N. Y.
115. M. S. CHENEY, Thew Shovel Co., Lorain, O.
116. J. CATES WILCOX, Alliance Clay Prod. Co., Alliance, O.
117. B. J. CUMMINS, Merrick Brick Co., Syracuse, N. Y.
118. PAUL PHELPS, Jeffrey Mfg. Co., Columbus, O.
119. W. A. DAY, The Frost Mfg. Co., Chicago, Ill.
120. EDWARD A. ROBERTS, Builders Exchange, Cleveland, O.
121. GEORGE DONLEY, The Donley Bros. Co., Cleveland, O.
122. C. CLAY NINN, The Wm. Donbar Co., Cleveland, O.
123. CHAS. D. JAMIESON, Building Industry, Cleveland, O.
124. J. A. MERCIER, Mercier Bryan & Larkins, Detroit, Mich.
125. C. H. BRYAN, Mercier Bryan & Larkins, Detroit, Mich.
126. R. C. BENNETT, Wellington Mach. Co., Wellington, O.
127. C. R. BANGS, Hall & Sons, Inc., Buffalo, N. Y.
128. JOHN GRETENCORT, L. Brick & Tile Co., Lewistown, Mont.
129. JAY TERRY, Terry Bros. Co., Kingston, N. Y.
130. A. W. KRAUSE, Sharon Clay Prod. Co., Sharon, Pa.
131. J. P. CALLAGHAN, Sharon Clay Prod. Co., Sharon, Pa.
132. L. L. RICHARDSON, Barbourville Br. Co., Barbourville, Ky.
133. E. G. LEWIS, Bucyrus Co., Cleveland, O.
134. R. A. BAILEY, Springfield Brick Co., Springfield, Mass.
135. ROBERT W. STEERE, Am. Dressler Tun. Kilns, New York.
136. A. E. DAVIS, Western Brick Co., Indianapolis, Ind.
137. F. G. BANKER, Brooklyn Brick Co., Indianapolis, Ind.
138. W. R. McKOWN, Brooklyn Brick Co., Indianapolis, Ind.
139. J. M. JENKINS, Jenkins Brick Co., Montgomery, Ala.
140. H. C. CRAMER, Lexington Brick Co., Lexington, Ky.
141. JAMES S. HOWINGTON, Coral Ridge C. Prod. Co., Louisville.
142. S. T. ISAAC, The Columbus Conveyor Co., Columbus, O.
143. H. F. BELT, The Columbus Conveyor Co., Columbus, O.
144. O. P. MEGAHAN, The Columbus Conveyor Co., Columbus, O.
145. Missing.
146. A. S. CUNNINGHAM, Lehigh Brick Works, Allentown, Pa.
147. JOSEPH SIDLO, Builders Brick Co., Chicago, Ill.
148. J. B. LLOYD, Shoals, Ind.
149. K. STILLWAUGH, Interprovincial Brick Co., Toronto, Ont.
150. C. G. POWELL, Montezuma Brick Works, Montezuma, Ind.
151. J. H. CHAMBERS, Chambers Bros. Co., Philadelphia, Pa.
152. C. B. THWING, Thwing Instrument Co., Philadelphia, Pa.
153. R. C. BENNETT, Wellington Mach. Co., Wellington, O.
154. JOHN A. CONARD, Rockland Shale Brick Co., Mansfield, O.
155. E. T. DECKERT, Main Belting Co., Cleveland, O.
156. WM. H. LUCKTENBERG, Burton-Townsend Co., Zanesville, Ohio.
157. A. L. SEE, Burton-Townsend Co., Zanesville, O.
158. GEORGE C. LAWSON, Burton-Townsend Co., Zanesville, O.
159. JOHN F. BUTLER, Elgin-Butler B. & T. Co., Austin, Tex.
160. R. H. McELROY, Internatl. Clay Mach. Co., Dayton, O.
161. GEORGE PAXTON, Internatl. Clay Mach. Co., Dayton, O.
162. G. W. NUSHAW, Internatl. Clay Mach. Co., Dayton, O.
163. E. T. ANDERLE, Internatl. Clay Mach. Co., Dayton, O.
164. JAMES P. MARTIN, Lancaster Iron Works, Lancaster, Pa.
165. JOHN F. OSBORNE, Corinth Brick Co., Corinth, Miss.
166. J. C. McMILLEN, Chase Fdry. & Mfg. Co., Columbus, O.
167. G. L. ROGERS, Taylor Instrument Co., Rochester, N. Y.
168. C. B. REINHARDT, The Queen City Br. Co., Buffalo, N. Y.
169. HENRY BENDER, North Collins Shale Br. Co., Buffalo, N. Y.
170. W. T. THOMPSON, Columbus, O.
171. W. W. DICKINSON, JR., Ark. Br. & T. Co., Little Rock, Ark.
172. E. F. CHAUNCEY, Trinity Church, Columbus, O.
173. GEO. M. FRIES, A. Fries & Sons, Connersville, Ind.
174. E. E. BERRY, H. Brewer & Co., Tecumseh, Mich.
175. A. M. COBBE, A. M. Cobbe Br. & T. Co., Erie, Pa.
176. PAUL WHEELER, Link-Belt Co., Cleveland, O.
177. JAMES A. MADDOX, Columbus, O.
178. CHARLES W. MILLER, Jeffrey Mfg. Co., Columbus, O.
179. ROY C. KENDALL, Link Belt Co., Philadelphia, Pa.
180. L. T. WRIGHT, Link Belt Co., Philadelphia, Pa.
181. B. A. CLAYPOOL, Amer. Brick & Tile Co., Morenci, Mich.

NAME FIRM TOWN

182. J. H. ROBINSON, Standard Stone & Br. Co., Bellaire, O.
183. F. E. KULP, Kulp Bros. Brick Co., Columbus, O.
184. D. D. DEEDS, The Thew Shovel Co., Lorain, O.
185. J. R. Lucktenberg, Burton-Townsend Co., Zanesville, O.
186. ELMORE OAKES, Joshua Oakes & Sons, Portsmouth, O.
187. I. M. JUSTICE, Manufacturers Equipment Co., Dayton, O.
188. M. S. BROWNE, Manufacturers Equipment Co., Dayton, O.
189. JAS. C. HARRIS, Manufacturers Equipment Co., Dayton, O.
190. CHARLES FRANCIS, Francis Vitric Br. Co., Muskogee, Okla.
191. THOMAS E. WILSON, Pittsburgh Clay Prod. Co., Pittsburgh.
192. THOMAS A. HIBBINS, The Stevenson Co., Wellsville, O.
193. W. G. STEVENSON, The Stevenson Co., Chicago, Ill.
194. THEO. A. YOUNG, Main Belting Co., Columbus, O.
195. A. A. OLDHAM, The Bonnot Co., Canton, O.
196. E. W. KINGSBURY, Scandinavia Belt. Co., Cleveland, O.
197. J. M. HALLISAY, Scandinavia Belt. Co., Cleveland, O.
198. A. K. KINLEY, Scandinavia Belt. Co., Cleveland, O.
199. ED FLANDERS, M. Shale Brick Co., Marietta, O.
200. H. JETT, Acme Brick Co., Marietta, O.
201. EDWIN F. KNIGHT, A. S. Reid & Co., Newark, N. J.
202. M. W. ATWOOD, Laclede Christy Co., St. Louis, Mo.
203. S. M. JENKINS, Celite Products Co., Cleveland, O.
204. G. H. CADWELL, Burton Engr. & Mach. Co., Cincinnati, O.
205. FRANK H. ROBINSON, Pittsburgh, Pa.
206. J. LEO CHILD, Hancock Brick & Tile Co., Findlay, O.
207. FRANK McCLELLAN, The Arnold-Creager Co., N. London, O.
208. F. T. BUZARD, The Arnold-Creager Co., New London, O.
209. R. T. STULL, U. S. Bureau of Mines, Columbus, O.
210. H. H. OBERLY, James B. Oberly, Wilmington, Del.
211. JOSEPH D. CITE, Internatl. Clay Mach. Co., Dayton, O.
212. R. C. WATTS, Ohio Paving Br. Mfrs. Assn., Columbus, O.
213. CONRAD D. DRESSLER, Amer. Dressler Tunnel Kiln, New York, N. Y.
214. ROSS C. PURDY, Buffalo, N. Y.
215. CHARLES WUEST, JR., Ohio P. B. Mfrs. Assn., Cincinnati.
216. D. J. STRICKLAND, Wellington Mach. Co., Cleveland, O.
217. J. W. ROBB, Clinton Paving Br. Co., Clinton, Ind.
218. GEO. F. SIMONS, Automatic Transp. Co., Buffalo, N. Y.
219. WILL P. BLAIR, Natl. Pav. Br. Mfrs. Assn., Cleveland, O.
220. C. P. MAYER, C. P. Mayer Brick Co., Bridgeville, Pa.
221. WALTER E. HILTON, Dunkirk Br. & Tile Co., Dunkirk, N. Y.
222. A. V. STURGEON, Suffolk, Va.
223. E. L. DANNER, Kokomo Brick Co., Kokomo, Ind.
224. J. CROW TAYLOR, Ky. Clay Products Assn., Louisville, Ky.
225. JOHN L. RICE, Vit. Pipe Mfrs. Assn., Akron, O.
226. GEO. J. POTTS, C. & A. Potts Co., Indianapolis, Ind.
227. DOUGLAS F. STEVENS, Acme Brick Co., Danville, Ill.
228. D. WARREN DeROSAY, Corry Br. & Tile Co., Corry, Pa.
229. JAS. R. THOMAS, Standard Brick Co., Crawfordsville, Ind.
230. H. S. HAMILTON, The McArthur Brick Co., McArthur, O.
231. J. F. KIEHBIEL, Columbus, O.
232. T. B. FREEMAN, Hay Walker Brick Co., Pittsburgh, Pa.
233. EDWIN L. MITCHELL, The Mitchell Br. Co., Cincinnati, O.
234. H. J. VOTAW, The Fate-Root-Heath Co., Plymouth, O.
235. W. N. DURBIN, Anderson Fdy. & Mach. Co., Anderson, Ind.
236. J. W. ARBUCKLE, Arbuckle & Co., Rushville, Ind.
237. J. M. POWELL, Ind. Drain Tile Co., Brooklyn, Ind.
238. J. O. TRAUTWEIN, Trautwein Dryer & Eng. Co., Chicago.
239. R. G. EISENHART, Consolidated Br. Co., Horseheads, N. Y.
240. R. C. BURTON, Burton-Townsend Co., Zanesville, O.
241. A. S. REID, A. S. Reid & Co., Inc., Philadelphia, Pa.
242. CHAS. H. FRANK, Hocking Valley Br. Co., Columbus, O.
243. JNO. J. MORONEY, Chicago Br. Mach. Co., Chicago, Ill.
244. O. P. BECK, The Galion Iron Wks. Mfg. Co., Galion, O.
245. HERMAN L. MATZ, S. S. Kimball Brick Co., Chicago, Ill.
246. BEN S. FISHER, Union Furnace, O.
247. H. J. FLOOD, Chisholm Boyd & White Co., Chicago, Ill.
248. L. W. FLOOD, Chisholm Boyd & White Co., Chicago, Ill.
249. L. M. JOHNSON, Corunna Brick Co., Corunna, Mich.
250. JOE RICE, Amer. Clay Mach. Co., Bucyrus, O.
251. O. N. TOWNSEND, Burton-Townsend Co., Zanesville, O.
252. W. P. KARNER, Thwing Instrument Co., Philadelphia, Pa.
253. HORACE F. CREW, Amer. Encaustic Til. Co., Zanesville, O.
254. KORIS TRIPONOFF, Amer. Encaustic Til. Co., Zanesville, O.
255. W. C. DAWSON, Amer. Encaustic Til. Co., Zanesville, O.
256. R. R. BAUER, Amer. Encaustic Til. Co., Zanesville, O.
257. F. K. PENCE, Amer. Encaustic Til. Co., Zanesville, O.
258. T. DWIGHT TEFFT, Mosaic Tile Co., Zanesville, O.
259. C. H. BURK, Arnold Creager Co., New London, O.
260. W. G. GREENBAR, The Arnold-Creager Co., New London, O.

NAME FIRM TOWN

261. WM. E. HAMILTON, Hamilton Mfg. Co., Columbus, O.
262. ELISHA K. KANE. Kushequa Brick Co., Kushequa, Pa.
263. G. A. MASON, Galion Iron Works & Mfg. Co., Columbus, O.
264. BERNARD F. WEBER, National Brick Co., Chicago, Ill.
265. L. E. RODGERS, L. E. Rodgers Eng. Co., Chicago, Ill.
266. D. G. MOOMAW, Stone Creek Brick Co., Stone Creek, O.
267. THOS. SIMPSON, Columbia, Tenn.
268. C. M. ROSS, Wellington Mach. Co., Wellington, O.
269. G. W. RUDISILL, Ohio Good Roads, Columbus, O.
270. L. E. OLDHAM, The Bonnot Co., Canton, O.
271. GEO. H. SMITH, Kansas City, Mo.
272. H. B. SMITH. Telantograph Corp., Cleveland, O.
273. C. E. JEWETT, The Hocking Val. F. Cl. Co., Nelsonville, O.
274. L. H. WILSON, P. Tile & Br. Co , Perrysburg, O.
275. C. C. HUESTIS. Carbon Mining Co., Carbon, Ind.
276. JAY CLARK, Fine Arts Ceramic Co., Indianapolis, Ind.
277. D. LUCKTENBERG, Burton-Townsend Co., Zanesville, O.
278. WM. G. BOHNSACK, Carey Brick Co., Chicago, Ill.
279. H. R. SYKES, Fate-Root-Heath Co., Plymouth, O.
280. G. G. STEIN, Fate-Root-Heath Co., Cleveland, O.
281. G. J. EASTON, Fate-Root-Heath Co., Cleveland, O.
282. O. A. WHITE, Fate-Root-Heath Co., Plymouth, O.
283. A. V. BLEININGER. Bureau of Standards, Pittsburgh, Pa.
284. R. FULLERTON, Kilbourne & Jacobs, Columbus, O.
285. B. de B. KEIM, Kilbourne & Jacobs, Columbus, O.
286. Missing.
287. RYLAND H. NEW, The Ham. & Tor. Sewer Pipe Co., Hamilton, Ont.
288. F. A. IERLAND, Amer. Clay Mach. Co., Willoughby, O.
289. J. A. PENFIELD, Amer. Clay Mach. Co., Willoughby, O.
290. W. F. KERN, Columbus Bldrs. Sup. Co., Columbus, O.
291. WALTER PURSELL, The Pursell Co., Cincinnati, O.
292. C. C. LIN, Mosaic Tile Co., Columbus, O.
293. S. Y. LIN, Columbus, O.
294. HENRY W. DOUDA, U. S. Bureau of Mines, Columbus, O.
295. RAY T. WATKINS, U. S. Bureau of Mines, Blacklick, O.
296. JOHN L. CARRUTHERS, Ohio State University, Denver, Col.
297. HYAT FROST, Connersville, Ind.
298. LOWRY F. SATER, Columbus, O.
299. G. E. LUCE, Amer. Equipment Co., Willoughby, O.
300. J. L. SCHROLL, Mfrs. Equipment Co., Dayton, O.
301. R. E. PLACE, E. M. Freese & Co., Galion, O.
302. W. B. NEHER, Ala. Brick & Tile Co., Hollywood, Ala.
303. R. J. DAWSON. Clev. Bldrs. Sup. & Br. Co., Cleveland, O.
304. J. H. HENBY. Cleveland, O.
305. GORDON KEITH, Canadian Clay-Worker, Toronto, Ont., Can.
306. ERNEST H. PAULSON, Norton Co., Worcester, Mass.
307. JAMES L. CARSON, Brown Steel Co., Columbus, O.
308. FRANK CARSON, Columbus, O.
309. EDWARD A. TONNE, Internatl. Clay Mach. Co., Dayton, O.
310. ARTHUR S. WATTS, O. S. U., Columbus, O.
311. R. K. SEE, Burton-Townsend Co., Zanesville, O.
312. F. E. SCHULTZ, Medal Pav. Brick Co., Cleveland, O.
313. LAWRENCE H. BROWN, Columbus, O.
314. CHAS. D. FRAUNFELTER, Ohio Pottery Co., Zanesville, O.
315. G. S. BRUBAKER, Peru, Ind.
316. C. H. ANDREWS, New Castle Min. & Clay Prod. Co., New Castle, Pa.
317. WALTER A. HULL, Bureau of Standards, Washington, D. C
318. M. ROPINE, Amer. Clay Mach. Co., Bucyrus, O.
319. MR. BLANCHARD, Amer. Clay Mach. Co., Bucyrus, O.
320. JOHN BLUM, Columbus, O.
321. J. W. HEPPLEWHITE, Columbus, O.
322. W. E. CRAMER, Fostoria, O.
323. HARRY A. ROBINSON, JR., Middlefield, O.
324. CARL G. BRUERNEER, Columbus, O.
325. HARRY D. FOSTER, Columbus, O.
326. Y. Y. WONG, Columbus, O.
327. JOHN M. COOLEY, Haydenville, O.
328. FRANKLIN W. GUNTHER, Columbus, O.
329. RICHARD E. JONES, Columbus, O.
330. G. Z. MINTON, Sidney, O.
331. J. S. GREGORIUS, Corning, N. Y.
332. CHAS. LAIRD, Ashtabula, O.
333. JAS. McKINNEY, Burton-Townsend Co., Zanesville, O.
334. F. J. MINGST, Roessler-Hasslacher Chem. Co., Akron, O.
335. WALTER P. BOERGER, Columbus, O.
336. F. G. WHITE, M. B. Skinner Co., Chicago, Ill.
337. W. H SEWARD, Hoytville Clay Co., Chicago, Ill.
338. J. C. POLING, Ada Clay Co., Ada, O.
339. J. M. MOOMAW, Shepfer & Moomaw, Sugar Creek, O.

NAME FIRM TOWN

340. W. A. EUDALY, Columbus, O.
341. C. E. HEATH, Fate-Root-Heath Co., Plymouth, O.
342. JOHN BERRY, Reed & Berry, Lynn, Ind.
343. ED. W. REED, Reed & Berry, Lynn, Ind.
344. C. H. LOCHER, JR., Glasgow Clay Prod. Co., Glasgow, Va.
345. EDGAR ANGLE, Hocking Valley B. Co., Logan, O.
346. GEO. W. DENNISON, Ohio Clay Co., Cleveland, O.
347. E. S. FAIRLEY, Frank H. Robinson Co., Pittsburgh, Pa.
348. F. N. SHANKLAND, Amer. Clay Mach. Co., Willoughby, O.
349. GEORGE KILBY. Columbus, O.
350. T. R. MARTIN, Hamilton Mfg. Co., Columbus, O.
351. Name and Address Missing.
352. Name and Address Missing.
353. JAS. L. DONEY, Stone Cr. Br. Co., New Philadelphia, O.
354. C. A. KNORR, Queen City Shale Brick Co., Cincinnati, O.
355. W. H. HOAGLAND, Claycraft Min. & Mfg. Co., Columbus, O.
356. D. H. CROSSEN, Corunna Brick Co., Detroit, Mich.
357. HENRY F. HORN, Corunna Brick Co., Detroit, Mich.
358. Name and Address Missing.
359. Name and Address Missing.
360. RALPH E. HANNA, Columbus, O.
361. ROBT. V. MILLER, Columbus, O.
362. M. M. MORROW, Hocking Valley Br. Co., Columbus, O.
363. W. A. SHOEMAKER, Bloomfield Brick Co., Indianapolis, Ind.
364. GEO. P. FISHER, Natl. Fire Proofing Co., Ottawa, Ill.
365. JAMES T. ROBSON, Ceramic Dept. O. S. U., Columbus, O.
366. ARTHUR WHITCRAFT, Amer. Mang. Steel Co., Chicago, Ill.

50 Buttons issued to visiting ladies.
416 Total registered attendance.
30 Attending, but not registered.
446 Total attendance.

FACTS VS. FICTION

An analysis of the foregoing roster may be interesting inasmuch as unfriendly critics have maliciously tried to mislead the trade as to the actual attendance at national conventions, giving the impression that the percentage of manufacturers of clay products in attendance at this and previous N. B. M. A. conventions was small compared with other associations. For instance, it was recently stated that only 125 or 150 of those present at Columbus were manufacturers of clay products, the inference being that the national convention is composed largely of machinery manufacturers and salesmen.

As a matter of fact there were over 200 manufacturers of clay products in attendance at Columbus. Of the 366 on the numerical roster only 60 were manufacturers of machinery or their representatives, and some of these are manufacturers of clay products; 40 were manufacturers or dealers in brickyard equipment; 14 were professional engineers and educators, who are a distinct asset to the industry; while 15 were students from the clay school at the O. S. U. Nearly all of the latter are sons of clayworkers, leaving 67 unclassified, exclusive of the ladies.

Comparisons are odious, and there is no occasion for the unfair comparisons that have been indulged in, the purpose of which is obvious. The outstanding fact, which even critics should recognize, is that the National Convention at Columbus was the largest gathering of clayworkers which has ever been held in this country, excepting only previous meetings of the N. B. M. A.

The following March 25th issue of The Clay-Worker will contain the balance of the Convention proceedings, including some of the most interesting papers presented and the discussions following the same, and a full report of the banquet, which was exceedingly interesting.

AMONG THE LIVE WIRES AT COLUMBUS CONVENTION

THE third floor of the Deshler Hotel was the rendezvous of all the delegates, convention week, for here were located the exhibit rooms of a large majority of live wires with something new to show in labor and fuel saving devices.

The arrangement this year reminded one of the William Penn, it was so different. The Hotel Deshler catered to the wishes of their guests and every courtesy was extended to make the week pleasant and profitable. The entire third floor was given over exclusively to the machinery and supply firms and the demand was such that there was an overflow to the fourth and other floors.

There was a merry buzz, a hurrying to and fro, a talkfest here, a demonstration there, every hour during the day. Leaving the elevator, your gaze was attracted by numerous placards giving room number of this and that firm. Along the walls and at the doors were long banners and placards. Everywhere one looked, the red and white lettering stood out boldly in view.

One placard read: "There is a letter for you in room 305." This letter was handed out by the Brown Instrument Company, which had on display a complete set of the various types of pyrometers used on the clay plants. Geo. W. Keller, G. L. Clapper and O. L. Larson were busy individuals, for there was some one in their room every minute, it seemed, anxious to know of or to tell the merits of the Brown instruments.

The International Clay Machinery Company, rooms 322 and 323, had something mighty interesting to show the delegates and presented each with a very fine desk ink-well, one of which adorns the writer's desk. Of special interest to the clay product manufacturers was their full size Underwood furnace gas producer, hundreds of which are being used today, saving time and fuel. Models of their kilns, bulletins and literature on their general line of clayworking machinery were on display. The representatives present were R. H. McElroy, Geo. Paxton, E. T. Anderle, J. T. Underwood, Jos. D. Cite, G. W. Nushaw and Ed. A. Tonne.

The American Clay Machinery Company held forth in rooms 325 and 326. Here were shown various models, bulletins and catalogues. The chief attraction to the common brick manufacturers was the trade mark machine. The rooms were made attractive with bouquets of flowers. "Smokes" were extended freely, as were also their memorandum books. As usual they had the largest delegation present, namely: R. C., L. W. and J. A. Penfield, F. L. Hopley, R. O. Perrott, Davis and H. W. Brown, C. B. Sharer, F. A. Ireland, M. Ropine, J. Rice and F. W. Shankland.

The representatives of the Fate-Root-Heath Co., C. E. Heath, O. A. White, G. J. Easton, H. J. Votaw, H. R. Sykes, J. F. Chambers and G. G. Stein, had a strenuous time. There was always a crowd in their rooms, 318 and 319. Their gasoline locomotive came in for considerable discussion as did their many well known clayworking machines and appliances. This firm always gives something unusual as a souvenir, this year it was a pocket book containing a $1,000 accident insurance policy. It wouldn't matter much now if the writer would get killed, his wife would get $1,000 at least, and could say: "The loss was entirely covered by insurance."

The E. M. Freese & Company (rooms 327 and 328) representatives, B. E. Place and H. H. Freese, G. R. and E. L. Hess, took things easy, entertained a host of friends and all were bubbling over with optimism. Old Man Prosperity has been good to this live, awake concern.

The Stevenson Company, represented by W. G. Stevenson, Thomas A. Hibbin and Ed. W. Dow, held forth in room 329. Plenty of business keeps these fellows in good spirits. In keeping with the spirit of the times, they gave as a souvenir a key chain sufficiently strong to hold the keys to your cellar.

Frank H. Robinson and E. S. Fairley represented the Robinson Lakewood Line, drying cars and clayworking equipment. They say they are doing a whale of a business.

H. Brewer & Co., had room 301 where E. E. Berry received the delegates, explained the absence of their popular executive, Charlie Burridge, and told of the merits of their complete line of clayworking machinery. Mr. Burridge was prevented from coming by sickness in their force and the great amount of work on hand.

Room 320 was a popular place. Here I. M. Justice of the Justice Radiated Heat Dryer fame, M. S. Browne, Jas. C. Harris, G. H. Smith, W. H. Sachs and J. L. Schroll, represented the Manufacturers' Equipment Co. Their clayworking machinery and Underwood Producer Gas systems are much in demand.

Geo. J. Potts of C. & A. Potts Co., Indianapolis, Ind., manufacturers of a complete line of soft mud machinery and also the big press used for making fire clay blocks, welcomed their old time friends, formed new acquaintances and presented each with a memorandum book and a combination looking glass and desk paper weight. Times are good with this concern.

Arbuckle & Company, of Rushville, Ind., was represented by S. Kelly and J. W. Arbuckle. This concern booked several nice orders for their clayworking machinery during the week.

E. F. Newcomb welcomed the delegates in room 425 and explained the many merits of the Engelhard, LeChatelier pyrometers, sold by Chas. Engelhard, New York.

A. J. Dunn was a busy individual doing effective work on the entertainment committee, but together with S. M. Chase and J. C. McMillan, had time to receive old friends and new ones and explain the merits of the Chase Foundry & Mfg. Company cars and equipment.

William N. Durbin, if looks are not deceiving, is having very little trouble selling the machinery made by his concern, the Anderson Foundry and Machinery Company, Anderson, Ind. He enjoyed the week very much and is very optimistic concerning future business.

J. O. Trautwein was there wtih bells on, ready to be button-holed and asked questions concerning his dryer and engineering work.

John J. Moroney felt like a bunch of shamrocks and he didn't have to use the blarney stone in telling of the good prospects of the Chicago Machinery Company. He booked some nice orders.

The Bonnot Company, one of the most substantial firms in the business, is well pleased with conditions as a whole, and is running its plant night and day to keep up with its orders. A. A. and his son, L. E. Oldham, extended the glad hand and with it their souvenir memorandum book.

L. E. Rodgers of the L. E. Rodgers Engineering Co., Chicago, took time away from his pressing business engagements to spend the week in Columbus and says he has something up his sleeve to spring on the clay trade in the very near future.

M. M. Minter, of the Flint River Brick Co., Albany, Ga., inventor of the Minter system of Burning, was a tired man at the end of the week. He was constantly explaining to the interested ones, and there were many of them, the many economical points of his system. He has installed some in quite a number of plants during the past year.

L. W. Flood represented the Chisholm, Boyd and White Company, of Chicago, Ill. His firm is unusually busy and satisfied with conditions in the clay trade.

The Roessler, Hasslacher Company, makers of high grade chemicals, colors and oxides for brick, terra cotta, tile and clay products, had a live wire representative in F. J. Mingst.

The interests of the Ceramic Supply and Equipment Co., Columbus, O., were well taken care of by W. D. Richardson and W. L. Bowers who were called upon by many of the clay product manufacturers seeking advice on kiln construction and plant operation.

The J. B. Owens Continuous Tunnel Kiln Co., Pittsburgh, Pa., had three busy representatives, E. P. Ogden, Warren H. Dunn and J. B. Owens. They convinced all visitors that their tunnel kiln has merits well worth a careful study.

Chambers Bros. Co., Philadelphia, Pa., was represented by Howard Chambers, who took an active interest in the convention work. He says that his concern is receiving its full share of orders.

W. A. Day, that jovial gentlemen, representing the Frost Mfg. Co., Galesburg, Ill., isn't worrying much about the sales of their boilers, engines and dry pans. That takes care of itself, "every customer is a satisfied one," quoth Mr. Day.

The Thwing Instrument Co. exhibited in Room 307 their pyrometers with base metal thermocouples. Messrs. C. B. Thwing and W. P. Karner were the representatives.

In Room 303, J. P. Martin welcomed the visitors and explained the blue-prints, and drawings of the general line of equipment of the Lancaster Iron Works, Lancaster, Pa., of special interest was their pipe rack dryers, and cable conveying systems.

One of the most interesting exhibits of the convention was that of the gasoline and kerosene locomotive of the Burton Engineering and Machinery Co., which gave an occular demonstration of its usefulness on a vacant lot just around the corner from the hotel where it was operated on a narrow gage track laid for the purpose. There was a crowd around this locomotive nearly every hour of the day. Mr. G. H. Cadwell explained the many merits of their locomotives in Room 309.

American Dressler Tunnel Kilns, as shown in drawings in Room 312, created much enthusiastic discussion. Various types of ware successfully burned in the Dressler kiln from pottery and small ware to immense tank blocks, weighing over a ton, was on display showing the versatility of this kiln. Conrad Dressler and Robt. W. Steere represented the company.

S. M. Jenkins, of the Celite Products Co., Pittsburgh, distributed literature on their Silocel for insulation kiln crowns, etc. This was a subject of deep interest to the delegates.

The Arnold-Creager Company, New London, Ohio, a concern which has sold twenty of their automatic brick machines since June 15th, had no cause for worry, and while they were feeling good at the convention they closed several nice contracts. They received a cablegram from Paris asking if they could ship ten machines at once. Frank B. McClellan, C. H. Burk, F. T. Buzzard and W. G. Greenbar all wore smiles that won't come off.

The Columbus Conveyor Co., of Columbus, O., had something interesting to tell the trade in regards to their conveyor systems. S. J. Isaacs, H. F. Belt and O. P. Megahan represented the company.

The Galion Iron Works, of Galion, O., manufacturers of coal unloaders and conveying equipment, had two hustling representatives in O. P. Beck and G. A. Mason.

Ellis Lovejoy enjoyed the convention work as well as the button-holing by delegates who wanted expert advice on ceramic problems.

Harry Webster, of Newport, Ky., was busily engaged all week explaining the merits of the Webster kilns and dryers.

Geo. F. Simons, Ohio representative of the Automatic Transportation Co., Buffalo, N. Y., had in his room some bulletins, catalogs, literature that set forth mighty good arguments for use of their electric elevating platform trucks on clay plants.

Each of the belting companies represented had three delegates. The Scandinavia: E. W. Kingsbury, J. H. Hillisay and A. K. Kinley, donated a most acceptable steel pencil as their souvenir. Main Belting: Earl F. Hiller, E. T. Deckert and Theo. Young, handed delegates useful memorandum books. Link Belt: Paul Wheeler, R. C. Kendall and L. T. Wright, their usual folding steel pocket rule.

Other firms represented were The Armstrong Cork and Insulator Co., Pittsburgh, Pa.; H. J. Jenks, Hook Patent Kiln Co., Columbus, O.; Bucyrus Co., Milwaukee, Wis.; Wellington Machinery Co., Wellington, O.; Thew Automatic Steam Shovel Co., Lorain, O.; Kilbourne and Jacobs, Columbus, O.; Taylor Instrument Co. and American Equipment Co., Chicago, Ill.

GLEANINGS FROM CONVENTION BUTTON HOLE TALKS.

W. R. McKown, of the Brooklyn Brick Co., Indianapolis, Ind., says they are confronted with two problems; one of production and one of transportation, and the latter has lately been seriously hampered by car shortage.

J. T. Howington, of the Coral Ridge Clay Products Co., Louisville, was chasing around after some additional equipment he has ordered and is anxious to have at work. They are so loaded with orders that they are having to turn down some interesting inquiries for brick and hollow tile.

J. M. Jenkins, Montgomery, Ala., says that while cold weather does not interfere seriously with their outdoor work, rains do, and this time they have had more than their share of wet weather to hamper both building and brick production.

The land of the Western Sunshine was represented by L. S. Collins, of that enterprising firm the Los Angeles (Cal.) Brick Co.

The Clay-Worker scribe who has persistently hammered on the subject of clay roofing tile and the need for development and exploitation of this product found a kindred spirit in Joe Rice, of the American Clay Machinery Co., for clay roofing tile is something of a hobby wth him, too, he having written a history of this item in clay. Naturally there was a mutual agreement on the present day need for arousing more interest in clay roofing tile and much discussion of the question of ways and means to bring it about and start that progressive development in the manufacture and sale of tile which is plainly necessary to round out the present day idea of permanent and fireproof building.

Notwithstanding the absence of some old stand-bys there was a pretty good showing of the southern contingent and it was interesting to note how they would just naturally flock together. Among the southern flock were to be found D. M. Moochi, from the Riverside Brick Co., Charlotte, N. C.; George M. Norwood, of the Geo. M. Norwood Brick Co., Goldsboro, N. C.; Fritz Salmen, of the Salmen Brick & Lumber Co., Slidell, La.; L. L. Richardson, Barbourville (Ky.) Brick Co.; J. T. Howington, Coral Ridge Clay Products Co., Louisville; W. W. Dickenson, Jr., Arkansas Brick & Tile Co., Little Rock, Ark.; J. C. Robinson, Clay Products Corporation, Hampton, Va.; H. R. Garden, Salem Brick Co., Salem, Va.; R. W. Payne, R. W. Payne & Son, Drake's Branch, Va.; A. F. Kleymeyer, West Point Brick & Lumber Co., West Point, Ky.; H. C.

Cramer, Lexington Brick Mfg. Co., Lexington, Ky.; Henry Webster, Newport, Ky.

What Luke McLuke would designate as another "damli" is the talk that the common brick business is going to pot.

Judging from the way he has started out Vice-President R. C. Burton will be able to make **some** speech with two years of additional training.

Another good thing about going to the N. B. M. A. Conventions is that every man who tries to, makes some new friends, and these in turn make life more worth living.

Jotham Post, East Williston, L. I., says that the great cry up their way is where and how to get brick. He has more demand in his local territory than he can produce material to supply without going into New York to mix up with the shortage there.

Famous Sayings—the remark made by Harry Cramer to the army officer whose automobile ran him down. Since it would take asbestos insert to print it you will have to ask Harry what it was.

Someone tried to make the point that Fritz Salmen, of Slidell, La., is partly a native of Cuba now instead of being full American, but since Cuba is also American in sentiment what's the difference?

Elisha K. Kane, of Kushequa, Pa., is actively interested in the subject of democracy in industry and the welfare of the rising generation through education. He has had some interesting things to say on this subject, some of which were being distributed by him in printed form at the convention.

There was a letter for you in Room 305. Did you see Brown and get it? Anyway one of the best expressions heard around the corridors was when some man asked if Brown instrument would save him money and a clayworker sitting by who was installing the Brown equipment said: "It will save you misery."

L. L. Richardson, of the Barbourville (Ky.) Brick Co., says that the urgent need for brick has caused them to continue efforts at operation right through the winter and though the weather has interfered some they have produced more than usual. Now they are planning important things which include gas producer equipment and some power shovel for digging clay.

John T. Hummert, of the Gem City Brick Co., Quincy, Ill., is one of the few men in the trade who can recall the Civil War Days and the brick trade immediately following. Mr. Hummert says his father was in the brick business during the Civil War and in the days following brick went to ten or twelve dollars a thousand and common labor to two dollars a day. This in turn was in a few years followed by a reaction in which brick went down to four dollars, and bricklayers were glad to get work at a dollar and a half a day.

When Harry Cramer, of Lexington, Ky., takes a notion to do something he is pretty hard to stop, and when he made up his mind to attend the N. B. M. A. convention even an automobile accident could not stop him. While he was on his way to take a train to Columbus his machine was cross-cut by a military machine carrying two army officers, knocked into a telegraph pole and he and his colored chauffeur were both pretty severely banged around. At that, however, and with his nose seriously cut and his sys bunged up while his chauffeur was sent to the hospital, he made his train and came to Columbus on time.

It was remarked freely and agreed to generally that the paper on Americanism in the clay industry by Colonel Orton was alone worth the trip to the convention.

H. C. Kleymeyer, of the Standard Brick Mfg. Co., Evansville, Ind., says that it is seemingly not a question of how much they sell as it is how much they can manufacture.

Prof. A. V. Bleininger, our Bureau of Standards man, says that he is being kept pretty busy these days on government research work but he anticipates quite a lot of private research work during the next few years.

A. F. Kleymeyer, of the West Point Brick and Lumber Co., West Point, Ky., like several others of the newer generation of clayworkers, was on familiar ground at Columbus, because he went to school there.

NO WOODEN HOUSES IN GREAT BRITAIN.

A while back there was quite a lot of newspaper talk about Great Britain turning to wood as a means for solving the housing problem in shorter time and at lower cost than if the usual method was followed of building with brick for permanency. Now there comes a report which indicates that this was mere talk, and that the people of the old country do not take kindly to flimsy or temporary building.

A recent consular report from England says that not much personal interest has been aroused in the subject of wooden building but there is being aroused interest in the modern type of American dwelling. It is pointed out in this report that the cost of building homes of the ordinary English style is now more than double what it was before the war and there is no likelihood of these prices coming down in the near future. In support of the claim for increased building cost a tabulation of current building material prices is given in which the best brick is now listed as $19.83 a thousand as compared to $8.88 just before the war.

There is incidental mention that the Leeds Corporation has decided to erect concrete houses, and there are various lines of relief suggested, but from a study of the reports, one is moved to the conclusion that the great era of wooden building prophesied for England will not materialize. What is more likely to happen is that the English builders will take on some of the modern ideas in American home architecture, modify them to suit their own notions and needs and build in the main with brick and other hard material because even with the present advantage in price these are lower and cheaper in the long run than lumber at current prices.

MAKING HIMSELF.

He looked at his job in a curious way,
And I'll try to repeat what I once heard him say,
"Now here is a task I've been given to do,
And what will be said when my labor is through?
I've the metals to work with, the tools to employ.
Yet metal and tools many poor men destroy.
Good and bad work are done to the very same plan
So the final result must depend on the man,
And this thing when it's finished is going to be
A positive mixture of metal and me.
"This thing will be useful and stand to the test
If into its making I've blended my best,
If enough of myself I put into my task,
'Who made it?' the man who shall use it will ask.
If I work with the metals and follow the plan
And shape it to size and then leave out the man
It won't hold together or bear with the strain,
And I, not the product, shall carry the stain.
For back of the metal in this men shall see,
In the way that I've shaped it a picture of me.
"My job is to labor in copper and brass
To make certain things the inspectors will pass,
And the product once finished is sent out to be
A perfect resemblance in metal of me.
If I've put into it just the best that I could
The article stands to the test and is good,
And I share in the praise that its merit may claim
By stamping a piece of good work with my name.
So the thing that I'm building of copper and brass
Isn't merely a piece the inspectors will pass,
I come to my task here whatever it be
With the notion that what I am making is me.

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COMMON BRICK MANUFACTURERS' ASSOCIATION.

Second Annual Meeting Characterized by Great Enthusiasm, Well Attended Sessions Able Papers by Architects, Advertising and Publicity Men, and an Enjoyable Informal Dinner.

THE SECOND ANNUAL CONVENTION of the Common Brick Manufacturers' Association of America was held in Columbus, Ohio, February 16th, 17th and 18th, at the Hotel Deshler in conjunction with the National Brick Manufacturers' Association convention.

Nearly one hundred brick manufacturing firms registered during the week. The meeting as a whole proved most interesting the program consisting for the most part in talks by architects and publicity and advertising men. Much good constructive work was done and the common brick business is much the better for the harmony and good fellowship created at this meeting. The common brick manufacturers of the country realize full well the merits of their product and are now putting their shoulders to the wheel to make the architects, contractors, builders and prospective home owners recognize the many merits of well burned common brick. The work of the Common Brick Manufacturers Association in this particular will fill a long felt want and prove most beneficial to the common brick business as a whole.

Eighty delegates attended the first session held Monday afternoon in the convention hall of the Deshler Hotel. President Schlake one of the chief stockholders of the Illinois Brick Co., Chicago, Ill., made an appropriate address in opening the meeting. He recited the work of the association since its organization more than a year ago, emphasized the good of meeting together, showed need for boosting common brick and complimented in glowing terms Secretary Stoddard for the effective work he had done for the association.

The paper "Importance of Knowing Your Costs," by Mr. E. H. Shull, of Ernst and Ernst, was given precedence on the program following Mr. Schlake's talk due to the fact that the author had to catch an early train. He stated that in the past manufacturers in the industry had failed to produce the profits coming to them due to the fact that proper cost accounting was not used. He declared that co-operation between competitors in team play and comparing costs would result in benefits far beyond expectations. He showed the need of knowing true significance of costs, declaring the industry to be on a wave of tremendous demand for common brick and that now was the time to put the business on proper basis by adopting a uniform cost system.

He emphasized the need of expert advice in adopting a cost system and cited incidents where installation of cost systems had saved thousands of dollars, in each case, great leaks being discovered in a single operation on the plant. He referred to the work they are doing for the American Face Brick Association, investigating 14 plants to discover the proper cost system and to determine where prices are too high and where too low and in this way arrive at the correct basis for all 14 plants. He recommended that the common brick manufacturer standardize his business so that every one will know the others' costs.

Secretary Stoddard followed with his report, covering the activities of the association in its preliminary work incident to the future national advertising campaign. He recited the progress the organization had made stating that increase in membership had been such that the original number of directors had been increased from nine to eighteen. In the beginning there were 167 members, this had been increased to 263, the membership representing a production of two billion annually. He estimated dues would produce $25,000 this year and in three years reach the $300,000 required to carry on the advertising campaign.

He spoke of his meeting with manufacturers in 36 cities, there being 45 meetings all told where he found good working organizations ready to co-operate. He pointed out the purpose of their magazine. "Building Economy," the issue of 2,000 manuals on "How to Build and Estimate" and informed the delegates in regard to the work of the architectural department in making plans and drawings for 32 houses to be used in housing book to be printed later. He referred to the ing Construction Industries, pointed out the great opportunity Construction Industries, pointed out the great opportunity in co-operation with this body and also with American Face Brick and Hollow Tile secretaries and agricultural publishers. He mentioned the work done with housing corporation in Chicago, when conferences resulted in the switching of the construction from frame to brick, 10,000 workingmen's homes to be sold at $4,000 each on easy terms, 550,000,000 brick being required. A big housing corporation in Cleveland was investigating this.

Wm. Schlake, President C. B. M. A., Chicago.

He stated they were helping the people of Los Angeles to extend their fire limits and referred to the work of D. Knickerbacker Boyd, of Philadelphia, the association's consulting architect, in compiling building codes in 75 cities and advising with them in various helpful ways. He spoke of the unfair statement in advertisements of other building materials and their efforts in removing these falsehoods. At the end of his talk he exhibited a large map of the United States with the location of members in red.

The Treasurer's Report.

Mr. Stoddard in the absence of Treasurer Earnest S. Barkwill, read the latter's treasurer's report, audited by Ernst and

Ernst. This report showed that during the previous 18 months there had been collected approximately $30,000 expended $13,597, and with notes payable a surplus remaining of $11,045.45.

"Why There Should Be a Standard Size for Common Brick," was the title of a paper read by W. Carver, an architect for the association. Nothing especially new was brought out in this paper, the association finally adopting for its standard size common brick 8x2¼x3¾ as adopted by the National Brick Manufacturers' Association in 1918. While it is seemingly impossible for all manufacturers to make the same size brick due to varying amount of moisture in the clay and the various shrinkages resulting, it was unanimously agreed upon that every manufacturer would try to keep as close to this size as possible especially in length and width, so that the brick will conform as closely as possible to face brick and be used to a greater extent in the future in facing as well as backing work.

Thos. R. Preece, vice-president of the International Bricklayers' Union and a director of the Union Brick Plant at El Paso, Texas, made a forceful address of the same nature and spirit as in his talk before the National Brick Manufacturers' Convention held in Chicago in 1913.

Ralph P. Stoddard, Secretary, C. B. M. A., Chicago.

The discussion which followed was similar to the discussion at the previous N. B. M. A. meeting mentioned as shown in the report of 1913.

Tuesday Morning Session.

"The Beauty of Common Brick," was the title of an able paper by Warren E. Griffis of Baltimore. He declared that very few of the manufacturers really appreciated the beauty of their products and therefore failed to extend its usefulness as it deserved. Common brick selected with care and laid up in suitable mortar joints, made a most attractive exterior wall. He suggested that the manufacturers make up panels of their brick and study the various possibilities in beauty and that then they would not be content to sell their product for backing up purposes only. He detailed the manner in which he forced the architects to use brick on the job and their education in realizing that the brick look entirely different in the structure.

"The Architect and the Industry; The Vast Possibilities of Common Brick," was the title of the paper read by D. Knickerbacker Boyd, Fellow American Institute of Architects, Philadelphia. He pointed out the ancient history of imperishable clay and its uses in the early days of our republic substantiated by thousands of brick homes and buildings still in use and practically as good as new, although over two hundred years old. He declared that common brick was a wonderful material, a material the manufacturer, architect and builder should be proud of and urged a continual campaign of boosting.

He particularly requested that the architects be given the essential data concerning suitability and adaptablity of this and other products so that each material should be kept in its proper field.

He referred to the monuments of brick chimneys, the sole remains of the Salem fire, stated that well burned brick was the safest building material known and that our people should be protected by building codes made after careful study of materials and that fire zones to stop rows of frame houses should be located.

The remainder of the morning and a portion of the afternoon session was given over to reports from various sections of the country on labor conditions, car and coal supplies, production, stock, etc. The most interesting of these was the report of Mr. Weber second largest brick manufacturer in America, who told of the conditions of Cook County, Illinois, and predicted an output of nearly two billion brick from that section during the present year.

Session on Advertising.

Tuesday afternoon, after completion of reports from various sections, the eighty-five delegates present listened to a talk on "You and Your Business" by D. H. Nichols of the Nichols-Moore Co., Cleveland. He pointed out the great number of homes, buildings, churches, theatres, warehouses, etc., that of necessity had to be built this year and urged the manufacturers to take advantage of the great possibilities and to boost common brick as never before in an endeavor to educate the public and make common brick the most popular building material. His concern is the advertising agency for the Common Brick Manufacturers' Association.

"The Story of Common Brick," was the subject of a paper by R. C. Collier of the B. Anderson Co., Cleveland. He showed the manner in which his concern is going to give common brick publicity through the small local papers and urged upon all present to co-operate in furnishing live material for such publicity and to occasionally place small advertisements to help along the good work.

"What Three Brick Will Do," was a carefully prepared talk by Secretary Stoddard, finely illustrated with colored charts and sketches giving comparative statistics, showing trend of the industry in production and use of material, the need of a national advertising campaign and a general scheme of enlightening the public.

Informal Smoker.

Tuesday evening the members enjoyed a dinner, followed by some illustrated talks, chief of which was the splendid address by William N. Cary of Albany, N. Y., on Common Brick, Old and New, In this connection pictures were shown of some of the old brick homes in and about Boston.

Mr. Schakle served admirably as toastmaster and created several hearty laughs. In his talk "Ten Thousand Houses of Common Brick," James F. Basinger, General Manager of the Chicago Housing Corporation, told how his ten thousand workingmen homes switched from frame to brick by the efforts of Mr. Herman Matz, of S. S. Kimball Co., and Secretary Stoddard. "Putting Your House in Order" was the subject treated by Earnest Bell of the Hydraulic Steel Co., Cleveland, Ohio.

Business Session.

The last session, Wednesday morning was given over to a business session, during which the following directors were elected. For three years; William Schlake, Charles H. Bryan, Ernst S. Barkwill, J. F. Reynolds, George A. Parry and Fritz Salmen; for two years; John P. Cahoon, Charles Francis, W. N. Cary, T. L. Herbert, L. S. Collins and T. E. Wilson; for one year; B. F. Weber, H. C. Kleymeyer, Tom W. Green, Warren S. Griffis, Wm. K. Hammond, Max D. Almond and E. S. Sheimer.

The election of officers resulted as follows; President, William Schlake; Vice-President, Charles H. Bryan, Fritz Salmen, Wm. K. Hammond and John P. Cahoon; Treasurer Ernst S. Barkwill.

In response to the rousing appeal made by D. Knickerbacker Boyd, it was voted by the convention to call upon the national, state and municipal institutions to co-operate with existing scientific, professional, technical and other organizations of the country as to furnishing authoritative information data on the source, manufacture and intelligent use of all materials of construction.

It was also voted to request the National Government to put into effective operation a comprehensive plan for the scientific cutting of lumber and reforestration. Also that advantage should be taken in the interest of safety to life and property from fire, and in the interest of health, conservation and durability with consequent saving of maintenance cost of the materials extracted from the earth and that they should be used for all walls and roofs of buildings to replace combustible materials and to save for the other diversified uses of man the wood which can not be replaced by other satisfactory materials.

Stress was laid upon the necessity of preserving, in so far as possible, the God-grown growth of standing timber to protect the watersheds of the country, to conserve the scenic effects and natural resources, and to reduce the cost of safeguarding America against fire.

It was voted that all fire walls and party walls separating buildings and enclosing exits for human beings should be of solid materials, and the Common Brick Manufacturers' Association offered its services and facilities to all governmental officials, associations, and citizens, individually and collectively, in the furtherance of the far-reaching program outlined above.

DEATH OF MRS. J. W. SIBLEY.

It is with deep regret we chronicle the death of Mrs. John W. Sibley, which occurred at her home in Birmingham, Ala., February 12. Late in October she suffered a slight stroke of apoplexy, from which it seemed she had almost entirely recovered. She was much interested in a new home —a brick bungalow which had been under course of construction for some time, and had been out to inspect the interior decoration in the morning of February 6. Returning home, she suffered a second and very heavy stroke, from which she never regained consciousness. Mrs. Sibley was the wife of the much-loved treasurer of the N. B. M. A., John W. Sibley, and had attended many of the national conventions, where her lovable and sunny disposition had won for her among the ladies many friends. A daughter, Miss Hettie Sibley, survives. The funeral was held at the home of Mr. Sibley's mother, where Mr. and Mrs. Sibley had been living pending the completion of their new home. Following Mrs. Sibley's death, Mr. Sibley suffered an attack of influenza and was quite ill for a couple of weeks, but writes that he is quite well again.

There is a good barrage of publicity now being laid down by the various burned clay interests, which should result in the capture of considerable additional trade.

OBITUARY.

ILLINOIS CLAYWORKER SUCCUMBS TO PNEUMONIA.

John B. Marshall, auditor and bookkeeper of the Streator Drain Tile Company, of Streator, Ill., died February 8, of pneumonia, following an attack of influenza. Mr. Marshall had been associated with the Streator company from the time of its organization three years ago. In writing of his death, Mr. J. A. Reeves, of that company, says:

"It would be difficult for us to exaggerate the ability and splendid character of Mr. Marshall. He was very much interested in the clay business and was rapidly becoming efficient; within a short time his judgment as to cost accounting and other intricacies of the business would have been an asset to the industry."

Mr. Marshall was thirty years old and leaves a widow and two daughters.

WELL-KNOWN TERRE HAUTE BRICK MAN ANSWERS THE FINAL SUMMONS.

His many friends in the industry will be grieved to learn of the death of James M. Hoskins, general manager of the Terre Haute Vitrified Brick Company, which occurred at Terre Haute, Ind., February 21, following a ten days' illness of toxic poisoning. He was a native of Indiana, having been born in Clay County in 1860. A widow and one son survive. Mr. Hoskins had a wide acquaintance among the clayworking fraternity, his jovial, genial nature endearing him to all with whom he came in contact. He had been a member of the N. B. M. A. for many years and was always the center of a lively group at the annual conventions.

The Late James M. Hoskins, Terre Haute, Ind.

Anticipating the best year in history for the sale of brick, the Canton Clay Products Company, with its factories at Robertsville, Ohio, announced today that work has been commenced on a new building, which, when completed, will enable the company to double its present daily production of 16,000 brick. The proposed new structure will cost between $40,000 and $50,000. The company's directors at a recent meeting authorized an increase in capital stock from $75,000 to $125,000. The increase was made to take care of the new building. The new structure is to be erected on a lot adjoining the company's present location. It is to be the same size as the present plant, 118 by 30 feet, and is to be completed by May 1.

AMERICAN CERAMIC SOCIETY.

Twenty-Second Annual Meeting at Philadelphia, Well Attended and Well Entertained. Over 100 Papers Read and Discussed in General and Divisional Sessions.

THE TWENTY-SECOND ANNUAL CONVENTION of the American Ceramic Society was held February 23rd to 26th, inclusive, in the beautiful, commodious Bellevue-Stratford Hotel, Philadelphia, Pa. While the attendance was not as large as that of the previous meeting, the convention as a whole was one of the most successful ever held in the history of this technical chemical organization, embracing all silicate industries.

The total attendance was about twelve score, 198 registered, representing for the most part the eastern membership. Of this total 53 were from Pennsylvania, 42 from New York, 29 from New Jersey, 24 from Ohio, 9 from Illinois, 8 from Washington, D. C., 7 from Maryland, 5 each from Indiana, Michigan and Massachusetts, 3 from West Virginia, 2 each from Missouri and Rhode Island and 1 each from Connecticut, Delaware, Alabama and North Carolina.

It was a strenuous week for all who were present, there being listed 131 papers and discussions, besides the general business of the society. The social features of the convention were very enjoyable, including an informal smoker Monday evening, a banquet Tuesday evening and sightseeing trips in Philadelphia and vicinity and inspection tours through such interesting factories as those of the Abrasive Material Co., Tacony, Philadelphia Textile Machinery Co., Conkling, Armstrong Co., Brown Instrument Co., Philadelphia; O. W. Ketcham Terra Cotta Co., Crum Lynn; Baldwin Locomotive Works, Eddystone; Camden Pottery and Victor Talking Machine Co., Camden, N. J., and Westinghouse Electric & Mfg. Co., Essington, Pa.

The ladies present enjoyed an automobile trip which included stops at the Independence Hall and other historical spots, Wanamaker store and the Curtis Publishing Co.

Monday morning a business session was held, including President's address, reading of minutes of previous meeting, reports of Board of Trustees and Treasurer, standing committees, sections, divisions and Committee on Definition of Ceramic.

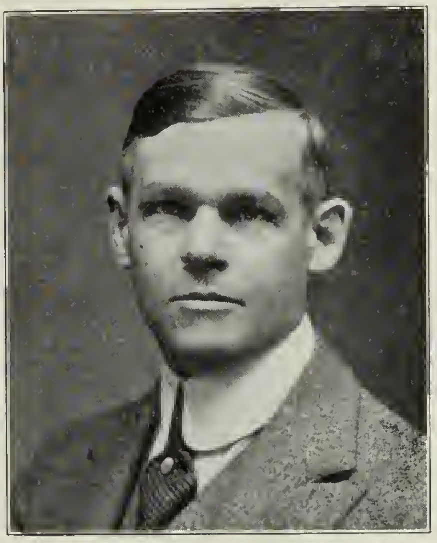
In his address President R. T. Stull declared that 70 per cent. of ceramic products is expended for labor and fuel and that if retail price was to be lowered the cost of production must be reduced, the solution as far as labor was concerned was in labor-saving devices, making the operations as nearly automatic as possible. He predicted that the time will come when brick will be made without being touched by human hands, but the condition will come to pass only after many years of study and experimenting and the expenditure of thousands of dollars. There have been many economies in clay mining, in transporting, grinding and screening, while in the closing steps the continuous and tunnel kilns have made savings of from 40 to 70 per cent. in fuel cost, but the middle processes are almost entirely by hand. It is here that mechanical appliances are needed.

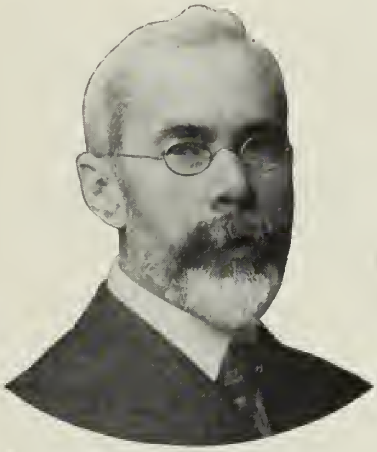
He also mentioned the fact that the value of ceramic products in 1919 was $500,000,000, the clay branch of the industry totaling $250,000,000, of which brick had the valuation of $120,000,000.

The Treasurer's report showed the financial condition of the society excellent, there being on hand approximately $7,000 invested in Liberty Bonds, etc.

In the reports of the various committees, that of membership was perhaps the most interesting. This gave the total membership as 1,228, an increase of nearly 200 over 1918. The total active resident members number 189; active foreign, 14; associate resident, 845, and associate foreign, 82.

President R. T. Stull.


President-Elect R. H. Minton.


Secretary C. F. Binns.

There were 88 new active resident members elected during the year, while the greatest increase was in associate resident members, 196. This great increase in membership is due to the fact that the society now embraces all branches of the silicate industry, including glass, enamels, refractories, terra cotta, white ware, porcelain, cement, lime, etc. The committee suggested that a special effort be made to get more members from those interested in the manufacture of heavy clay products.

The various chairmen made reports for the sections, student branches and industrial divisions, reviewing the work carried on in their particular auxiliary branches of the society during the past year.

The reports of the various industrial divisions, as enamels, glass, refractories and terra cotta, emphasized the fact that the work accomplished resulted in a stimulation of great interest, so that there was a great increase in number of papers presented.

The report of the Committee on Definition of "Ceramics" was presented in an able paper by Dr. E. W. Washburn, Urbana, Ill. This was one of the best read before the convention. It delved into the ancient meaning and derivation of the term and showed proof, with assistance of work done by Doctor Oldfather, that the correct definition should be that ceramics pertains to anything formed of an earthly material hardened by fire. Based on this definition, ceramics includes all silicate industries, even lime, magnesia, plaster paris, etc.

Mr. Minton, Chairman of the Program Committee, gave an interesting report, interesting from the point of the number of people that have presented papers. The number is small as compared to the number in the society. About two per cent of the members have presented about thirty per cent of the papers.

The formal program of papers, with discussions, was opened Monday afternoon, with about 138 present. Seven papers were presented, namely: "Note on the Classification of Clay on a Ceramic Basis," A. S. Watts, Columbus, O.; "Note on Testing of Clay for Light Weight Concrete Aggregate," D. H. Fuller, U. S. Bureau of Standards, Pittsburgh, Pa.; "Experiments in Dead Burning Dolomite and Magnesite," "A Direct Reading Overflow Volumeter," and "Experiments with Aventurine Glazes," all three of which were by H. G. Schurecht, U. S. Bureau of Mines, Columbus, O.; "An Examination of Some of the Sources of Error in the Methods of Determining Porosity," E. W. Washburn, Urbana, Ill., and "Methods of Testing Sagger Mixtures," by S. C. Linbarger and C. F. Geiger, Niagara Falls, N. Y.

A Delightful Smoker.

Monday evening the ceramists enjoyed a smoker which consisted of songs, moving picture films, college yells and a burlesque by Alfred, N. Y., members on the work of Secretary's office. This clever sketch was written for the most part by Miss Norah Binns, daughter and assistant of Secretary C. F. Binns. The characters of Secretary Binns, Purdy, Forester, Dressler, office boy, assistant secretary, Bleininger and Bloomfield were well handled and much laughter was created by good natured jibes. A number of parodies were sung, that on ceramic engineers making the biggest hit. The films styled "The Potters' Wheel," "Manufacture of Glass Tubing" and "Accident Prevention" were most interesting. Light refreshments and smokes were served.

Tuesday morning and afternoon the delegates had choice of division meetings, which were held in separate rooms, located on the first and eighteenth floors of the hotel.

Refractories Division.

In the Refractories Division (A. V. Bleininger, Chairman; R. M. Howe, Secretary;), thirteen papers were read and discussed. The more important papers were as follows:

"Behavior of Bond Clays in Graphic Crucibles Under Brass and Steel Melting Practices," by R. T. Stull, U. S. Bureau of Mines, Columbus, O., a treatise consisting of the manufacture of twelve graphite crucibles involving over twenty American clays several of which proved far superior to the famous Klingenberg clays and also Dorset clays—showing our independence from Germany or England in this particular.

"Design for a Fire Brick Plant," by R. H. Minton, Metuchen, N. J. By proper designing of fire boxes and kilns, the author was able to burn with about three-fourths fuel used in ordinary round kilns and about one-half more than in tunnel kilns.

"Tests on a California Refractory Clay," by H. W. Douda, U. S. Bureau of Mines, Columbus, O. This showed the characteristics of the rather rare California refractory clays.

"Note on the Load Behavior of Aluminous Refractories," by A. V. Bleininger, U. S. Bureau of Standards, Pittsburgh, Pa. The author gave results of manufacturing specially made fire brick in use in oil burning furnaces.

Enamels Division.

The Enamels Division (E. P. Poste, Chairman; R. R. Danielson, Secretary;) enjoyed the reading and discussion of seven papers, the most important of which was that on the subject, "Fish-scaling of Gray Ware Enamels," by R. R. Danielson, U. S. Bureau of Standards, Pittsburgh, Pa. As a result a committee was appointed to co-operate with the Bureau of Standards on work being conducted. Mr. H. F. Staley was appointed Chairman.

"Some Relation of Composition to Solubility of Enamels in Acid," by H. F. Staley, U. S. Bureau of Standards, Washington, D. C., was a preliminary paper on work which will eventually lead to production of acid proof enamels.

Several papers on electric and chemical cleaning of steel for enameling purposes, showing some of their recent developments in this end of the enameling industry, were read.

White Ware, Porcelain, Etc., Division.

This division (R. T. Stull, Chairman; Paul Teetor, Secretary;) had perhaps the largest attendance of any. Ten papers were read, the most important of which was by A. V. Bleininger and W. W. McDanel, U. S. Bureau of Standards, Pittsburgh, Pa., on "The Use of Domestic Kaolins in the Manufacture of White Ware Pottery." They brought out the point that we haven't by any means a sufficient supply of primary kaolins to satisfy the demand of the white ware factories, although we have quite excellent substitutes for foreign materials.

A quite important paper was that by E. W. Washburn, Urbana, Ill., on "A Possible Explanation of the Differences in the Behavior of Potter's Flint and Ground Quartz in Pottery Bodies and Glazes." This brought out the difference between potter's flint and ground quartz. The former comes down to a state where it has properties of fused quartz glass with a great deal less heat than ground quartz.

In his paper, "Note on Zirconia Porcelain," A. V. Bleininger brought out the fact that with the use of Zirconia porcelains can be prepared which possess the physical properties not usually possessed by porcelains.

"Further Studies of Porcelain," by F. H. Riddle, Detroit, Mich., was quite a study of different types of hard porcelains.

Terra Cotta Division.

The Terra Cotta Division (F. B. Ortman, Chairman; R. L. Clare, Secretary;) devoted a full day to their work. Nine papers were read and discussed, namely:

"The Effect of Variation in the Size of the Grog in Terra Cotta Bodies," by R. L. Clare and D. F. Albery, Woodbridge, N. J.

"The Effect of the Size of Grog Particle in a Terra Cotta Body," by H. E. Davis, Crum Lynn, Pa.

"Satisfactory Method of Using Barium Hydrate in Place of Barium Carbonate to Take Care of Soluble Salts in Terra Cotta Bodies," by M. E. Gates, Terra Cotta, Ill.

"Some Data on the Composition of Kiln Gases and Their Effect on Terra Cotta Glaze and Colors," by F. B. Ortman, Chicago, Ill.

"The Effect of Glaze Composition on the Crazing of Terra Cotta," by E. C. Hill, Philadelphia, Pa.

"Substitutes for Tin Oxides in Glazes," by R. H. Minton, Metuchen, N. J.

"Vermilion Colors from Uranium," by C. F. Binns and Frobisher Lyttle, Alfred, N. Y.

"Discussion of Spalling of Enamel Terra Cotta After Erection in Building," by F. B. Ortman, Chicago, Ill.

The fourth paper, by F. B. Ortman, received the longest discussion, mostly on the effect of sulphur and reducting conditions on terra cotta glazes and colors, i. e., blisters, discoloration etc., the remedy agreed upon being changes in the burning conditions.

In their paper on "Vermilion Colors from Uranium," C. F. Binns and Frobisher Lyttle, Alfred, N. Y. showed the development of vermilion red from uranium.

Glass Division.

This section was largely attended and held the interest longer than any of the divisions. Forty-five were present at the Tuesday morning meeting. Dr. E. W. Tillotson was chairman and Chas. H. Kerr, secretary. Twenty-one papers were read and discussed, the most important of which was that by D. W. Ross, of Washington, Pa., Chairman of Committee Glass Refractories, Refractories Division, on the subject, "Specifications for Glass Refractories." This gave specifications for clays used for pots and tank blocks.

Many valuable contributions to the ceramic literature of the glass industry were made during this divisional meeting, but of no particular interest to the average clayworker.

Delightful Banquet.

Tuesday evening 170 ceramists partook of a splendid feast served in the large Banquet Hall of the Bellevue-Stratford. Spice was added to the occasion by a clever sleight-of-hand performer, who removed and returned the watch of Ross Caesar Purdy without that alert individual even knowing how or when. This occurred just previous to President Stull's proper introduction of the Toastmaster, Mr. Francis Walker, Sr., one of the oldest members of the organization.

The star performer of the evening was Edward J. Cattell, city statistician of Philadelphia, who welcomed the ceramists to the city in behalf of the mayor and told many humorous stories that delighted all present. Mr. Cattell told of the many industries in which Philadelphia leads the world, such as hats, textiles and locomotives, and remarked that if Philadelphia was slow or asleep, it would certainly be tough on all other cities when she finally woke up. He declared that we are entering a new era in which comes the realization that there is enough trade for all and that commerce must be carried on honestly. He closed with an appeal that this new business feeling be spread through the land and instilled into the hearts of all Americans. He was followed by Calvin O. Althouse, director of the School of Commerce, Central High School, who made a long talk, splendid in its oratory, but too long to be fully appreciated. Brief speeches by A. V. Bleininger and R. C. Purdy closed the event.

A Symposium on Tunnel Kilns.

Wednesday forenoon and a greater part of the afternoon was devoted to a general session including paper on continuous tunnel kilns and discussions of same, especially those of Harrop, Dressler and Owens.

C. B. Harrop introduced the subject with an interesting paper practically the same as read before the National Brick Manufacturers' Association convention held in Columbus, O., the preceding week.

This was followed by papers by Ira E. Sproat, Sebring, O.; Geo. W. Cochran, Steubenville, O.; Donald Albright, Sebring, O.; Geo. Brain, New Castle, Pa.: E. K. Proodian, Cambridge, O.; C. J. Kirk, New Castle, Pa.; E. Ogden and J. B. Owens, Zanesville, O. These gentlemen gave data and operating cost figures on their various kilns.

The discussion for the most part was on the relative merits of the muffile and open-fired kilns and was carried on not only by those directly interested, but also factory operators who have the kilns in actual operation.

The discussion also brought out the fact that fire brick manufactured in the United States are of very superior quality, as compared with those manufactured abroad, and that tunnel kilns would be used eventually for very high temperatures. They are already burning heavy fire clay blocks weighing as much as a ton, with as equal success as the small and light weight ceramic products, such as pottery, brick and tile. The concensus of opinion was that in time the manufacturers of high grade ceramic goods would be forced to adopt the tunnel kiln because of its economy in coal and labor and the excellent quality and uniformity of ware produced.

Election of Officers.

Late in the afternoon the final business of the convention was taken up. One hundred and twenty-five associate members were raised to full membership, and the following new associate members were favorably voted upon by the membership:

New Members.

Wilson A. Phillips, Phillips-Harper Co., Trenton, N. J.
Samuel Trood, U. S. Sherardizing Co., New Castle, Pa.
Jno. B. Maddox, Jno. Maddox Sons Co., Trenton, N. J.
J. H. Barker, Elk Fire Brick Co., Philadelphia, Pa.
Jos. M. Stull, O. W. Ketcham, Crum Lynn, Pa.
W. K. Brenholtz, Champion Ignition Co., Flint, Mich.
Frank G. Jaeger, Brick Stove & Range Co., St. Louis, Mo.
Donald P. Ritchy, Empire China Works, Brooklyn, N. Y.
Arthur E. Gray, Pittsburgh Clay Pot Co., Pittsburgh, Pa.
Thos F. Emminger, Pittsburgh Clay Pot Co., Pittsburgh, Pa.
Michael F. Nagle, South Amboy Terra Cotta Co., South Amboy, N. J.
Jno. L. Bauer, New England Enameling Co., Middletown, Conn.
Lawrence D. Bridge, Bridge & Beach Mfg. Co., St. Louis, Mo.
Andrew Foltz, Lambertville Pottery Co., N. J.
Elwood S. Moore, School of Mines, State College, Pa.

Corporation Members.

Gillinder Bros., Port Jervis, N. J.
Philadelphia Drying Machinery Co., Philadelphia, Pa.

A change in the rules was made that will abolish the initiation fee for associate members and make it possible for the Board of Trustees to fix the dues for both classes upon the same basis.

A vote of thanks was tendered the local committee, namely: Frederick Stanger, D. H. Applegate, Jr., W. H. Fulweiler, J. P. Goheen, C. A. Hall and W. E. Saunders.

The election of officers resulted as follows:

President, R. H. Minton, Metuchen, N. J.
Vice-President, E. T. Montgomery, Franklin, O.
Trustee, F. H. Riddle, Detroit, Mich.

The offices of treasurer, secretary and editor of Journal are appointive. R. K. Hursh, of Urbana, is treasurer; C. F. Binns, of Alfred, N. Y., secretary, and Homer Staley, Washington, D. C., editor.

After installation of officers a rising vote of thanks was tendered the retiring officers.

The following committees were appointed:

Standards.

M. F. Beecher, Chairman.
R. R. Danielson.
E. E. F. Creighton.
C. W. Berry.
R. M. Howe.
Hewitt Wilson.
R. K. Hursh.
C. B. Harrop.
E. C. Hill.
M. C. Booze.
O. J. Whittemore.

Rules.

A. S. Watts.
E. W. Tillotson.
R. L. Clare.
R. K. Hursh.
T. A. Klinefelter.
J. B. Shaw.

Co-operation.

E. W. Washburn.
S. G. Burt.
Frank B. Dunn.
J. Poole Maynard.
H. E. Maddox.
D. E. Emley.
G. A. Rankin.
Jno. W. Sanders.
C. L. Sebring.
F. L. Steinhoff.
D. F. Stevens.
F. W. Walker.

Sections and Divisions.

R. C. Purdy, Chairman.
C. C. Ashbaugh.
Leslie Brown.
G. D. Morris.
F. B. Ortman.
R. D. Landrum.
A. G. Malon
F. G. Kirkpatrick.
E. P. Poste.
C. W. Parmelee.
E. W. Tillotson.

Publications.

L. E. Barringer, Chairman.
A. V. Bleininger.
H. Ries.
H. F. Staley

Membership.

F. H. Riddle, Chairman.
L. J. Frost.
S. C. Linbarger.
H. K. Kimble.
A. A. Klein.
Atholl McBean.
Frederick H. Rhead.
T. H. Lant.
Aug. Staudt.
S. R. Scholes.
Frederick Stanger.
D. F. Stevens.
Gail Truman.
J. D. Whitmer.
H. Schmidt.
R. T. Stull.

Research and Development.

A. V. Bleininger, Chairman.
Geo. H. Brown.
P. H. Bates.
Wm. M. Clark.
J. S. Laird.
R. M. Howe.
R. B. Stosman
A. S. Watts.
E. W. Washburn.

CERAMIC SOCIETY NOTES AND PERSONALS.

Francis Walker, Sr., of Beaver Falls, Pa., one of the charter members of the American Ceramic Society, is a believer in Universal Military Training and has been called upon from time to time to make addresses on Americanization and the employers' attitude on Citizenship.

When the villian in the piece of the film on accident prevention stalked upon the stage, some one in the audience said "that's Purdy" and a wit remarked, "Purdy, good—."

Irene Sproats, of Sebring, Ohio, has the same smiling countenance he wore on that memorable boat ride from Boston to New York during the mid-summer meeting of the society some years ago.

Clare, Barringer, Bowman, Purdy, Ogden, Howe, Walker et al missed the dancing they generally enjoy when the ceramists trip the light fantastic with the brickmakers' wives and daughters at the N. B. M. A. Smokerette.

The attendance was nearly equal to that of the Pittsburgh meeting when 200 registered but nearly 250 were present.

Karl Langenbeck, whose red covered book, Chemistry of Clays, helped many of the ceramic students in building the foundation work of their scientific knowledge, has not attended any of the meetings in recent years though he was a very familiar figure in the early days of the society, spent a day renewing old acquaintances. He was called upon to make a speech and responded in his usually happy vein. He is much improved in health and is now actively engaged in consulting engineering work, Washington, D. C.

Ross Clarice Purdy made a talk on ceramic education preceding the long session on tunnel kilns and made the remark at one time he was able to write down 75 formulas in calculus without making a single mistake. "Assistant Secretary" Shaw remarked that if Purdy did so, it was because he copied them from his examination paper. Shaw neglected to inform the audience, however, that he himself copied them off his cuff.

Homer Staley, Editor Ceramic Journal.

Absent, but not forgotten, were such good men as Orton, Richardson, Lovejoy, Gates, Mayer, Swalm, Ficus, Hice, Middleton, Geijsbeek, Wheeler, Parmelee, Pence and Bell.

Mr. and Mrs. Stanley Burt, Mr. and Mrs. R. C. Purdy and Mr. and Mrs. Arthur Watts seemed to enjoy the occasion immensely.

Purdy met his waterloo in the magician. When he was dumfounded by the cleverness of that sleight-of-hand performer, it was about the only time we can recall that he didn't have a come back. A student who flunked his exams. could not have had a more depressed look.

Honestly, we don't believe the assistant secretary is the lady nicotine Shaw depicted in that burlesque. In our days of student life in Alfred, smoking was even a greater offense than drawing cartoons of the professors on their blackboards.

What has become of R. L. Frink, that noisy artist who made things lively at the Pittsburgh meeting? Maybe he is preserved in a glass case for glass was his long suit.

Those college yells and songs are getting to be an annual event. Illinois and Rutgers woke up this year but Ohio State seems to hold the lead on strength of voice and members. Alfred made a good showing, lead by a member of the faculty.

Stuffed celery $1.05, three cider punches $1.95, good heavens and that doesn't even buy one share of stock in the Bellevue Stratford Hotel Co.

Dr. A. V. Bleininger made a very humorous toast at the banquet. His subject, "Research Work," enabled him to point out the possibilities in making sour mashes, etc., through ceramic inventions. He did not refer to his sportsmanship of kilning clay birds!

Of the twenty-two men honored by the office of president of the society, the following were present: Burt, Langenbeck, Walker, Bleininger, Binns, Purdy, Reis, Watts, Barringer, Brown, Staley, Stull, Stover and Minton. The ex-presidents missing were Wheeler, Richardson, Gates, Lovejoy, Pamelee and Hice.

It might be interesting to note that twenty-two meetings have been held in turn in the following cities: Columbus, Detroit, Old Point Comfort, Cleveland, Boston, Cincinnati, Birmingham, Philadelphia, St. Louis, Columbus, Rochester, Pittsburgh, Trenton, Chicago, Washington, Wheeling, Detroit, Cleveland, New York, Indianapolis, Pittsburgh and Philadelphia.

The American Ceramic Society was organized Feb. 7th, 1899, Columbus, Ohio. The first officers of the organization were: President Prof. H. A. Wheeler, St. Louis, Mo.; Vice-President, Ernest Mayer, Beaver Falls, Pa.; Secretary, Prof. Edward Orton, Jr., Columbus, O.; Treasurer, Stanley R. Burt, Cincinnati, O.; Managers, W. H. Zimmer, Wheeling, W. Va.; Samuel Geijsbeek, New Breighton, Pa., and Chas. F. Binns, Trenton, N. J.

Frank H. Riddle, Detroit, Mich.

It is generally acknowledged that the real foundation of the American Ceramic Society dates back to the reading of a technical paper by E. E. Gorton, of Terra Cotta, Ill., at an N. B. M. A. convention in 1898, Pittsburgh, Pa. The title of this paper was "Experimental Work, Wise and Otherwise." In this he showed how to set about to find the working limits of a raw lead glaze on a given body at a given temperature, stating "the most important single contribution which has been made to the technology of clayworking is the use of the 'chemical formulae' as a means of calculation, comparison and experimental work."

A. E. Williams is back at work with the Bureau of Standards, much improved in health. He is chief of the Glass Section and is making quite a study in optical glass.

In the discussion of fire brick to be used in construction of tunnel kilns for high temperature work, one of the old time members wanted to know where they were going to get the foreign material to burn to Cone 18. He was soon set at ease when Mr. Riddle stated that there were good refractory materials in this country that would stand Cone 26.

Stanley Burt was treasurer of the society the first seven years, Ellis Lovejoy the next seven, Herford Hope the following four years and Ralph Hurst to date.

The Central Ohio Section of the A. C. S. held a meeting February 20th, at the Hotel Deshler, Columbus, Ohio. Two papers were read: "A Glaze Study Involving Some Interesting Colors Developed by Nickel Oxide," by J. D. Whitmer, was illustrated by samples of glazes and colors developed. This aroused much interest. The second paper was by R. C. Purdy, "Essentials for Training Ceramic Engineers." This led to a heated discussion on the part of prominent members present including Bleining, Stull, Watts, Pence and others.

In the evening session, the election of officers resulted as follows: M. B. Cheney, Chairman, J. D. Whitman, Secretary-Treasurer, and A. S. Watts, Counsellor. A discussion on Tunnel Kilns was lead by Prof. C. Harrop.

It was suggested that the next meeting be held in Zanesville, some time in the early spring.

FRANK H. RIDDLE JOINS THE JEFFREY DEWITT COMPANY FORCES.

Mr. Frank H. Riddle, formerly with the Bureau of Standards, in clay products division and engaged in experimental work in porcelains and refractories, rendering especially commendable service in war work, has recently accepted a position with the Jeffery Dewitt Co., at Detroit, Mich.

He was selected to serve in the capacity of Director of Research for this company which manufactures the well-known spark plug core used by the Champion Co. of Toledo.

The Jeffery Dewitt Co. have large well-equipped laboratories and carry on considerable research work. Members of the staff of the Jeffery Dewitt Co., who attended the sessions of the recent convention of the American Ceramic Society at Philadelphia were Paul Teetor, J. S. Laird and D. Hager.

HADFIELD-PENFIELD STEEL COMPANY TO SUCCEED THE AMERICAN CLAY MACHINERY COMPANY

THE American Clay Machinery Company, known to the clay craft throughout the world, is to be merged into a new million-dollar company christened the Hadfield-Penfield Steel Company. The new member of the firm, Sir Robert Hadfield, of Sheffield, England, is a prominent figure in the steel industry, being one of the foremost steel manufacturers of England. At Sheffield alone the Hadfield plants employ more than 15,000 men. The American plants at Bucyrus and Willoughby, Ohio, will be continued under practically the same management as heretofore, but new factories will be erected for the production of steel by new and patented processes that will give employment to hundreds, aye, thousands of workmen and make these Buckeye towns important industrial centers.

Mr. R. C. Penfield's remarkable executive ability has made him conspicuous in the clayworking world, and it is a safe prediction that he will make an equally enviable record in the steel business. With King Steel crowning the world of industry and growing in importance constantly, Mr. Penfield will be given an opportunity for achievement commensurate with his ability and energy. We regret the passing of the trade name, American Clay Machinery, but we presume that the new firm name, Hadfield-Penfield Steel Company, will in a short time be just as familiar to the trade and stand for a still higher quality of mechanical skill and efficiency. "What's in a name, a rose by any other would smell as sweet."

THE CLAY-WORKER

Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

Title registered, contents copyrighted.

THIRTY-SEVENTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance) - - - - - - - -	$ 2.00
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Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to

226 East Ohio St. T. A. RANDALL & CO. [Inc.]. Indianapolis.

Vol. 73. MARCH 12, 1920. No. 3.

CURRENT COMMENTS.

Columbus was the right place.

* * *

You can find enough trouble in this world anyway, so why look for it?

* * *

The stay-at-homes missed a lot of pleasure and information of the practical sort.

* * *

There is such a thing as co-operative competition, and it is a good thing to have in business.

* * *

Making better brick is often a short cut to making better profits as well as a reputation for progress.

* * *

Heat costs too much these days to let it go to waste. The answer is, make all practical use of your waste heat.

* * *

Surely there is no call for antagonism this year between brick and hollow building tile, for there is plenty of need for both.

* * *

As usual the smokerette proved to be a pronounced success, so that now it is being looked forward to with almost as much interest as the annual banquet.

* * *

There is no question about Columbus being a good place to have a convention, or of its being a good place for the younger generation of the clay industry to go and learn about the chemistry of clay.

* * *

It is to be hoped that the fellows who stayed at home and who can now read about the doings at the annual convention will be inspired thereby with the fixed idea that they intend to be present next time.

* * *

What the average man used to think he knew about taxes was nothing to what he now realizes he doesn't know.

* * *

About the best common-sense idea to get out of all this thrift argument is save a part of your income and build a home.

* * *

Those who didn't attend the convention can read all about it in The Clay-Worker and thus profit some by the papers presented and the discussions following them.

* * *

If there is need to increase your output, the first thing to do is to find what part of your plant it is that limits its capacity, then see what can be done to enlarge its work.

* * *

It is interesting to note that most of the kiln and burning improvements of the day center around the ideas of uniforming kiln temperature throughout, and of temperature control as well as fuel economy.

* * *

Current reports indicate that labor is somewhat more plentiful, but the general complaint is of indolence and a restless disposition, lack of interest and dissatisfaction. This is a condition that time and patience will cure.

* * *

Those who listened to that address on Americanism by Col. Orton not only went home better Americans therefor, but they also carried with them a better understanding of our duty to those from abroad who are seeking to become Americans.

* * *

One of the good traits that has developed in the clayworking industry out of the years of N. B. M. A. gatherings is an order of personal friendliness which leads to one man gladly showing another how he does things and how some new burning system or equipment has been installed and is being operated with profit.

FOSTERING A GOOD IDEA.

One of the best ideas taken up and given active attention by the meeting of the common brick section is that of encouraging, in every way practical, the training of more young men in the art of bricklaying. It is bricklayers we need, and the amount of brick building, as well as the good of the brick business and the welfare of the country as a whole, depends materially upon the number of bricklayers that will be available for brick construction. Here's hoping they keep up the good work and that it results in materially enlarging the army of bricklayers.

RIVALRY.

The Clay-Worker has from time to time made a plea against antagonism in the clayworking business, and right now it seems fitting to repeat that plea, especially as between common brick and face brick, and brick itself and hollow building tile. Friendly rivalry, which stimulates progress and which leads to new development and active exploitation, is a good thing. When it is carried beyond this, however, to a matter of active antagonism, it is neither good nor desirable. There is room for all the clay products that can be manufactured for structural uses, and variety adds spice and interest. Active antagonism between the various divisions, however, pulling against each other, is bad business, for which there is but little excuse and no tenable reason. Let us have friendly rivalry in promoting interest in the different products, but let us fight clear of separating into cliques and developing antagonism.

SOME MATTERS OF DUTY.

There are some matters of plain duty before every manufacturer of clay products used for structural purposes. These duties are: First, to bend every effort to produce enough brick, hollow tile, sewer pipe and other clay products to supply the structural needs of the country during the year. The other duty in this connection is to furnish these at fair prices. This means at as low prices as are consistent under present conditions and which will make the industry yield a fair return on the capital invested and the energy expended. These are matters of duty, not merely because it is a part of the duty of every man connected with the production of structural material to help supply that material in such quantities as will relieve the housing shortage, but it is a matter of duty also from another viewpoint, that of contributing as much as practical to the restoration of normal times and the relieving of what we term the spirit of restlessness. Moreover, the industry should regard the situation as one of privilege as well as duty, and get a goodly measure of satisfaction out of putting forth all possible effort this year to supply the needs of the country with the best building material on earth.

THE EVOLUTION OF BRICK.

One cannot study the history of the clayworking industry in this country without being impressed with the wonderful evolution that has taken place in connection with brick. In the pioneer days brick was brick, and the products in clay were in the main brick and tile. Today we have a wide range of products developing from the brick idea and a wonderful change in the brick product itself.

At first it was just brick; then came the distinction between what might be termed common brick and refractory brick, those having peculiar fire-resisting qualities. Later came the vitrified paving brick for sidewalks, streets and roads as an improved item for this purpose over the common, ordinary brick. Still later came the development of front and fancy brick, and out of this has grown up our great face brick industry.

Incidentally, an offshoot from the brickmaking is hollow tile, which was used primarily for inner walls and for fireproofing purposes around steel structure members, but which is now spreading out into the broad field of general wall construction.

The vitrified or street surfacing brick, plus the face and ornamental brick, plus the hollow building tile, make up an item the total of which today equals the total common brick production. Yet, when we go back and think it over, this is all but a matter of evolution or development from common brick.

What is perhaps more directly interesting right now, however, is the process of evolution in common building brick during the present generation. Common brick making has undergone some wonderful changes from thirty or forty years ago. Practically everything made then would today be termed common brick, and quite a percentage of the kiln turnout was soft burned and called salmon brick. Today we have reports of kiln burns ranging up to 95 and 98 per cent. perfect. This means there are practically no under-burned brick, and that in quality the poorest of the common brick today is superior to the best face brick used forty years ago.

Naturally under these conditions we have not only developed a great line of special face brick, but we have developed brickmaking to the point where it is a question if we can properly call any great percentage of our brick common brick in the light of what common brick was understood to mean a generation ago.

Sometimes we think there is no such thing as common brick any more, except at a few scattered plants where modern ideas have not yet been applied to brickmaking and burning. In the majority of modern brickmaking institutions the common brick product has been so improved in the process of making and so much better burned that it is now a superior article.

One going back through the history the past forty years in clayworking in this country is impressed with two things. One is that there has been a wonderful evolution in brickmaking, in which the common brick has become a number of items of uncommon quality. The other is that America today produces the best as well as the greatest line of clay products to be found anywhere in the world.

THE MACHINERY CONTINGENT.

No one visiting the rooms and headquarters of the machinery and supply contingent at the N. B. M. A. could help but be impressed with the fact that this is an interesting and valuable part of such meetings. The only matter of regret this year was that the machinery people were so busy that the number attending was curtailed somewhat, and some of those coming cut their visits a little short. The brick men in attendance could be found interestedly inquiring into everything in the machinery line, from steam shovels, locomotives and kilns to pyrometers. Interest was never keener, and the subject of new ideas and the prospect of improvement presented by them.

CROCODILE TEARS.

In carrying out the proposition to memorialize governmental, state and municipal authorities to preserve our forests by encouraging building with brick, let us not place it upon any hypocritical basis nor make it an occasion for crocodile tears. There is obviously a selfish purpose here and it is but the part of frankness to admit it. Our banks make a plea for saving as an aid to thrift, which is good business for the banks, and it is also good for the people. In the matter of promoting brick building we have something of the same situation, so let us frankly admit that we have a selfish end to serve, then base our plea for the use of brick and tile in building operations on the ground that it will be good for the people of the country as well as beneficial in a business way to the clayworking industry. This is no time for subterfuge propaganda, and here we have an argument that will hold water without it, so let us be frank about it and not make of it an occasion for pretense and crocodile tears.

THE 1919 ASH PILE.

Figures printed by American Industries, as compiled by the Journal of Commerce, show the total of property destroyed by fire in the United States and Canada for the year 1919 was $269,000,775. This is the biggest loss of any year on record with the exception of two. During 1918 the total loss was nearly 350 million dollars, while in 1906 the total loss was approximately 460 million dollars. Figures for 1906 are explained because this was the year in which San Francisco suffered its great conflagration, and there is some explanation of the great loss of 1918 because it was war period.

There is no explanation for the tremendous loss of 1919 except that of flimsy building and carelessness.

The figures of the annual fire loss constitute an impressive argument in favor of building for safety against fire as well as for permanence, and this in turn means an argument for burned clay products. It is, therefore, a duty as well as to the interest of every clayworker to keep these figures before him and present them, when occasion justifies, to the public and the prospective builders. One way to reduce the fire loss is to build with material which will not burn, and since building of this class is the cheapest in the long run there is plenty of argument in favor of it.

Meantime let us not overlook the fact that much of our fire loss is chargeable to our national reckless carelessness. We are a wasteful people in many respects, but this waste through fire loss is about the most deplorable waste of which we are guilty. We should strive earnestly to reduce this waste through better building and better attention to reducing fire hazards and safeguarding property against carelessness which leads to fires.

LABOR AND IMMIGRATION.

We find that some are troubled over the labor shortage as it is, while others are borrowing worry on the theory that immigration is being curtailed and the future will see a much greater shortage of labor than now exists for this reason. Enough concern over the labor shortage to stimulate active interest in labor-saving devices is a good thing and is already proving its qualities. On all sides power-driven machines and appliances have been brought into play to supplement human labor, until today in all industries, from farming to manufacturing, we are doing more work with less human labor than ever before. Part of this has been brought about by stress of conditions, but the labor-saving devices will remain and be added to both on the farm and in the manufacturing industries, so that we are likely to see in the near future a surplus of labor, men going about looking for work, rather than a more acute shortage. This may seem to some like a far-fetched prophecy to make right now, but it is being ventured just the same, and the signs of the times are pointing plainly in that direction. Both the shortage of labor and the high price are leading to an extensive replacing of labor with mechanical devices. These will fill the needs of the day and enable us to catch up with production with what labor is available. Moreover, America is still the greatest country in the world, and not only will many of those who have gone back to the old countries soon be glad to return, but there will be many others from the old world asking to be admitted into this country. Indeed, if we are in any danger in this respect, it is from a future influx of undesirables rather than from a shortage of labor.

A DEPARTMENT OF PUBLIC WORKS.

The National Federation of Construction Industries has submitted a referendum ballot on the proposal before Congress to create a Department of Public Works and to define its powers and duties. There has for some time been an organized agitation for the creation of the Department of Public Works, and a bill to this effect is now before Congress—the Jones-Reavis Bill S. 2232—H. R. 6649.

Space will not permit a complete reviewing of the idea involved here, but in substance it is to convert the Department of the Interior into a Department of Public Works, and move some of the bureaus now operated under the Department of the Interior to other departments, and transfer to the new Department of Public Works certain bureaus now under other departments of the government, notably the Bureau of Public Roads and the Forest Service from the Department of Agriculture. There is room for plenty of discussion both for and against this proposition, and it is recommended that those interested in the subject make a study of it and express their opinion in advance of legislation rather than complain afterward. Returns on the referendum of the National Federation of Construction Industries should be in the general office of the federation, Drexel Building, Philadelphia, not later than April 30th.

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"OLD GLORY."

"Old Glory," we love it because it reflects,
  Unstained as the bright shining sun,
A record as clean as the tooth of a hound
  Or the day that has only begun.

Its folds have preserved for myriads unborn
  A haven of peace and of love,
A haven where justice and freedom abound
  As God's shining stars up above.

The red in its stripes was caught from the blood
  Of the martyrs who gave it its birth,
And reminds that our own is cheerfully pledged
  To prevent its descent to the earth.

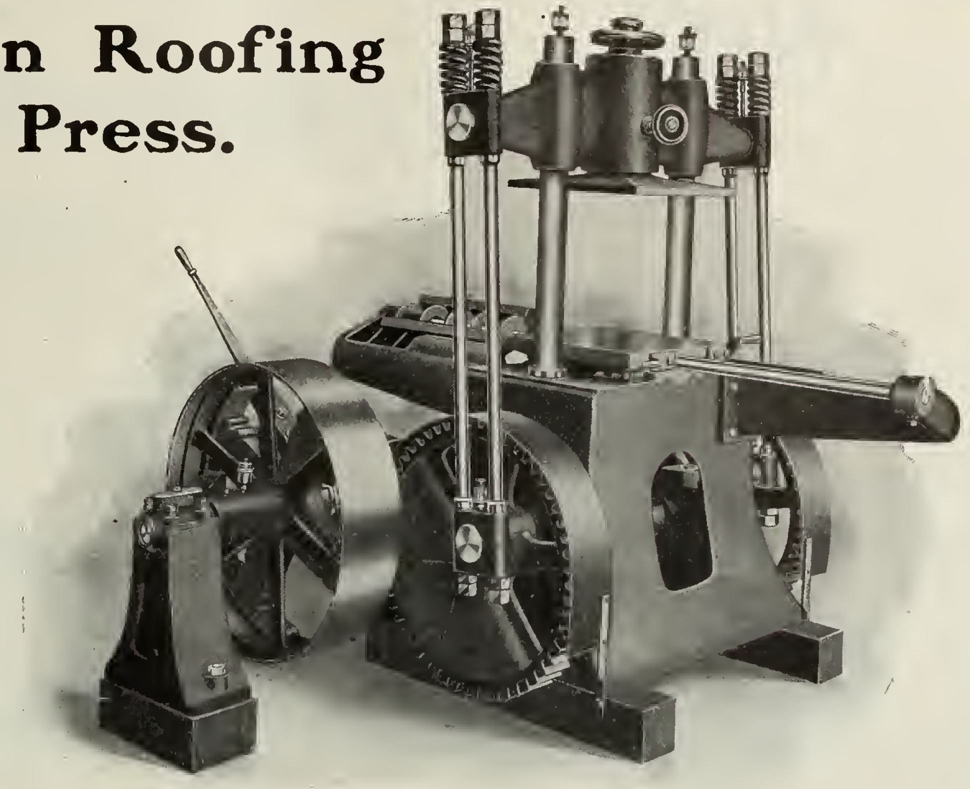
The blue of its field surrounding the stars
  Is a fragment of heaven itself,
That serves as a beacon of hope undefiled,
  That seeketh not profit or pelf.

The beautiful ribbons of white speak of peace,
  Unspotted and clean and secure,
A peace that, with honor, we fervently hope
  Will ever and always endure.

—L. A. Handley, Richmond, Ind.

American Roofing Tile Press.

We build a complete line of Roofing Tile machinery including this splendid press. It is designed on advanced lines and is simple and efficient We will be pleased to send a full description of this and our other Roofing Tile machinery on request.



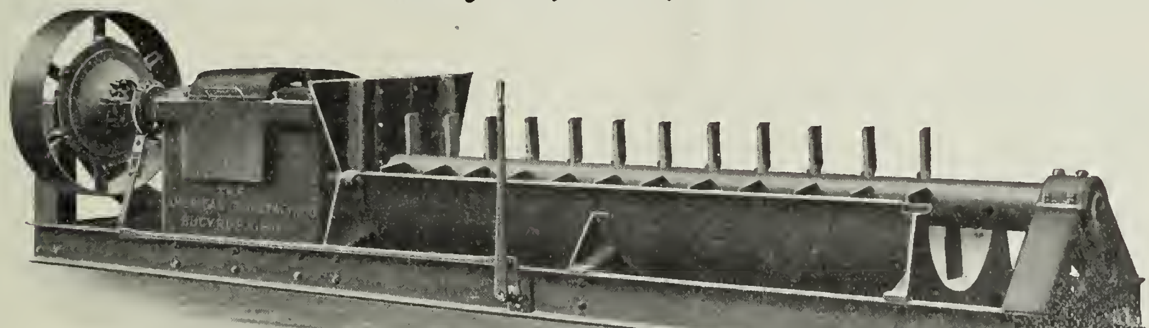
American No. 39 Roofing Tile Press.

American No. 291 Pug Mill.

There is no line of pug mills that will compete with this American Line. They have many superior points, all of which are enumerated in our Pug Mill circular. It's yours on request. These mills are mounted on steel "I" beams. They are of rigid alignment construction. The power requirements are light. In capacity they are in a class by themselves. Get the circular.

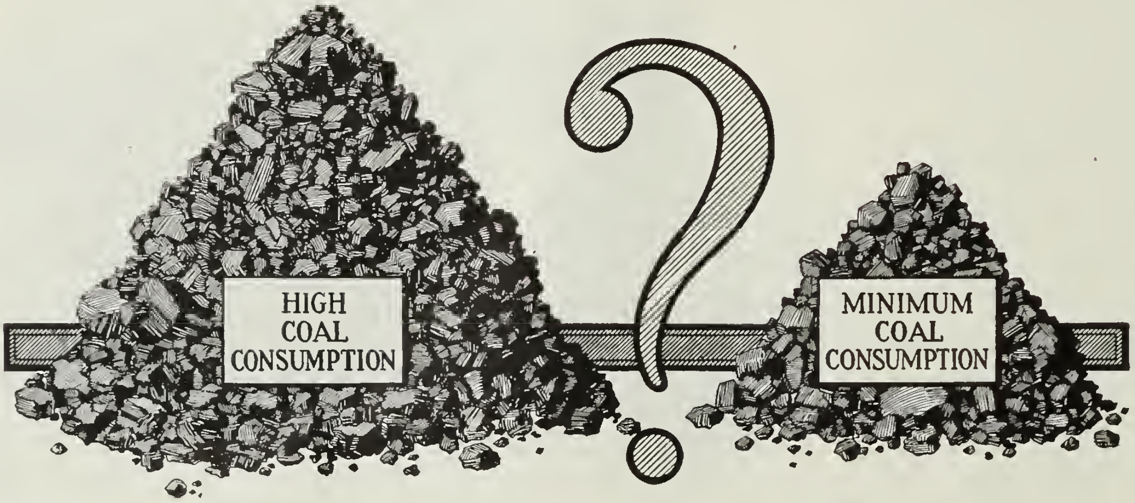
The American Clay Machinery Co.

Bucyrus, Ohio, U. S. A.



American No. 291 Pug Mill

WHY WASTE COAL?



These are not the days for coal waste. If ever we conserve, it ought to be right now. With coal at the present high price and scarce at that, every effort should be made to SAVE COAL. Cars of coal are being confiscated to meet urgent demands. Why then should the clayworkers continue to use twice as much Coal as they need. In the interest of economy and bigger profits every clay products manufacturer should do his best to save coal. If coal were free it would still be a crime to waste it in the face of the great need for more coal. But when it is a matter of dollars in your pocket as well as public need, you should save.

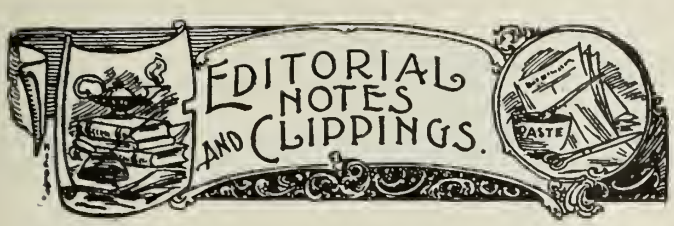
There is no better way to save and profit than by using the Haigh Continuous Kiln for burning. It not only saves half your coal but half your labor. It makes a better product and stabilizes your daily production. The Haigh Kiln in connection with an American Waste Heat Dryer will make big extra profits at the present cost of coal and they will pay for their installation cost in a very short time.

Get our printed matter on these two modern plant necessities. Good for a small plant, fine for a big one.

The American Clay Machinery Co.

Bucyrus, Ohio

BUILT RIGHT RUN RIGHT



EDITORIAL NOTES AND CLIPPINGS.

The Kirk Brick Company will start a plant at Bucks Crossing, Ala., C. M. Kirk is at the head of the plant.

The M. E. Gettys Lumber Company, of Gaffney, S. C., will establish a brick plant with a capacity of 60,000 brick per day.

W. C. Pope has leased the brick plant at Amarillo, Texas, which he will remodel, installing up-to-date machinery and appliances.

George M. and George A. Sherwood and A. H. Howell have incorporated the George M. Sherwood Brick Company, at Goldsboro, N. C., with $25,000 capital stock.

Daniel Cook, of Camden, Ala., writes that he is going into the brick business and would be glad to receive catalogues of brick machinery and supplies.

The McArthur (Ohio) Brick Company have leased the Puritan brick plant for a period of ten years and will pay the latter company 60 cents royalty for every 1,000 brick made.

The Greater Deshler corporation has closed a contract with Trausch & McCroden, brick and tile makers, to erect a factory at Deshler, Neb., and have it ready for operation in May.

E. F. Rusch, 704 Monroe street, Minneapolis, Minn., writes for a sample copy of The Clay-Worker, as he is going into the manufacture of brick and is looking for information on the subject.

The State Board of Affairs of the Oklahoma State Penitentiary at McAlester, Okla., has voted to increase the output of the state plant to 35,000 per day, and improvements will be made in the plant accordingly.

The Goldston Brick Company has been organized to manufacture brick at Gulf, N. C. W. W. Brewer, of Cunnock, N. C., is president and R. L. Goldston is manager of the company, which will erect a brick plant of 50,000 daily capacity.

The Asheville (N. C.) Brick and Tile Company filed certificate of amendment changing its name to Fletcher Brick Works, increasing its capital to $50,000 and changing its principal office from Asheville to Fletcher. Mr. J. P. Fletcher is president of the concern.

The Willowbrook Brick and Tile Company, of Blanchard, La., has been organized with $100,000 capital stock. F. M. Brown is president of the company and A. J. Kautz is superintendent and will have charge of the construction of the plant, which is to have a capacity of 100,000 brick per day.

The McCook (Neb.) Brick Company is in the market for about seventy good second-hand dryer cars. They want a single-deck car, 24-inch gauge, 36 inches wide and 7 feet long. They say they are asking for second-hand because of their inability to buy new ones with any certainty of delivery under sixty days.

W. F. Baker, architect and builder, of Big Stone Gap, Va., writes that he contemplates building a brick plant at that place, and would like to get into communication with manufacturers of brick machinery and supplies. There is an inexhaustible supply of both shale and clay at that point, and Mr. Baker considers the location excellent for a brick plant.

The Nebraska Clay Products Company, Omaha, Neb., has been organized and will at once begin the construction of a plant at Tekamah, Neb., under the direction of Claude Smith. This company, capitalized at $1,500,000, has acquired the plant and clay deposits of the Farmers' Clay Products Company at Tekamah. Thirty-five acres of shale deposits of a known depth of from 90 to 137 feet will be developed. There is enough clay in this deposit, ceramic engineers say, to make 375.000 brick per day for over 100 years. The present factory of 50,000 capacity will be remodeled and will be operated in connection with a new three-unit plant of the most modern construction. Each unit of the new plant will have a capacity of 165,000 brick a day. Officers of the company are: J. Frank Haarman, president; John Dutcher, vice-president; F. L. Dawson, second vice-president; Thomas Young, secretary-treasurer; H. H. Smith, general manager.

J. T. Budd, of Westerville, Ohio, writes that he intends to start a brickmaking plant at that point.

L. E. White has purchased the Douglas brick plant at Princeton, W. Va., and will increase the capacity.

The Selma Brick Company, incorporated with $100,000 capital stock, will establish a brick and tilemaking plant at Selma, Va.

R. T. Marye advises us he is at the head of a movement to organize a company at Camden, S. C., for the purpose of establishing a brickmaking plant.

DeLatte & Legrange, of Lake Charles, La., will make a number of improvements in their plant, increasing the annual capacity from 6,000,000 to 8,000,000 brick.

Charles Brewington is at the head of a concern that will erect a brick plant at Stamford, Texas, of 40,000 daily capacity. Mr. Brewington is a leading lumber dealer of West Texas.

The Paragon Brick Company of New Jersey has been capitalized at $200,000 for the manufacture of brick building material. The office of the company is located at Elizabeth.

J. A. Carroll is president and C. D. Meadows secretary of the McGraw Brick Company, recently incorporated at Gaffney, S. C., with $100,000 capital. An immense plant will be erected at once.

The Mid-Continent Brick and Tile Company, of Tulsa, Okla., will spend $35,000 enlarging their plant, adding a crusher, dry pan, motor and steam shovel. J. H. Sessing is general manager.

The West Texas Face and Common Brick Company, Wichita Falls, has been incorporated with a capital stock of $150,000 and will build a plant. The incorporators are J. H. Boring and B. Counselman, Wichita Falls, and E. M. Raub, Chicago.

The Peerless Brick Company has been organized at Concord, N. C., with $100,000 capital stock. A plant of 50,000 daily capacity will be erected at once. J. A. Cannon is president, W. H. Gibson secretary-treasurer, and J. L. Brown manager of the concern.

W. J. Ruddy, of Wilmar, Minn., has purchased the Wilmar Brick and Tile Company, together with the real estate connected with same. He will at once organize a stock company for the purpose of erecting an immense plant on the property. Mr. Ruddy is an experienced brick manufacturer.

The brickmaking plant of Walker & Frank, of Detroit, Mich., was destroyed by fire February 12. The loss is estimated at $250,000. The brick are burned with crude oil and a tank stored underground and holding 2,000 gallons of oil made the fire extra hazardous for a time. The plant will be rebuilt at once.

In order to meet the rapidly growing demand for brick for building purposes in the lower Rio Grande valley a brick manufacturing plant with a daily capacity of 70,000 bricks is being built at Edinburg, Tex., by John Closner and his son, J. J. Closner. Three kilns are now nearing completion and a fourth will immediately be put up.

Walter Kupfer, of the company which purchased the stamping works at Newcastle, Pa., announces that the company, which will be directed by the American Dressler Kiln Company of New York, will make bricks and clay products for the tunnel kilns. Improvements costing $100,000 are to be installed, and it is expected that operations will be under way within a month. Within a year, from 300 to 500 men will be employed.

Jonesboro, Ark., is to have another big brick and planing mill corporation, to be known as the Arkansas Brick and Lumber Company. The company has been organized and will be ready for business in a short time. The capital stock is $100,000, all subscribed, with $75,000 paid in. The stockholders have elected five directors and will elect four more. The officers are: President, G. W. Culberhouse; vice-president, W. C. Haynes; secretary-treasurer, Zeb Ballew. The manager of the planing mill will be Ed. Burton. W. C. Haynes will manage the brick factory, and Ed. Morrison of Bloomington, Ind., will be superintendent and foreman. The company will build a modern brick factory on ten acres just east of the city limits.

JOHN BOYLE JR.
Attorney-at-Law
PATENT
Ouray Building,
Washington, D. C.
16 years on the examining corps of the United States Patent Office.

KILNS
Continuous Tunnel
Continuous Down Draft
Continuous Muffle
DRIERS
Write for Complete Information
HENRY WEBSTER & SONS
Kiln and Drier Experts Consulting Engineers
NEWPORT, KENTUCKY

ASSISTANCE GIVEN
Clay Product Manufacturers who desire increased output or larger equipment. I have sold many Clay Product Company Bonds, and have a large clientele for this class of securities.
Correspondence Invited
FRANKLIN W. MORGAN
First National Bank Bldg. Chicago, Ill.

For Lease
Fine seam of fire clay on Hocking Valley R. R. near Nelsonville, Ohio.
Two seams of coal operated on same property insuring abundance of cheap fuel.
Also Central Power Plant on grounds.
Good labor supply.
The Sunday Creek Coal Company
Columbus, Ohio

CORRESPOND-ENCE.

THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

CONVENTION ECHOES.

A Great Year Ahead of the N. B. M. A.

Dear Mr. Secretary:

I am back on the job again after spending a very enjoyable week at one of the best conventions I ever had the good fortune to attend. Prof. Orton and the Columbus people know how to do things. I can see a great year ahead for the N. B. M. A. with a man like Mr.Hammond as its president, and I hope that we may all be able to get together again in another year.

With kindest regards, I am, Yours very truly,
GEO. H. CLIPPERT.
Detroit, Mich., February 28, 1920.

Never Enjoyed a Convention More

My Dear Mr. Randall:

I am sorry I did not get to say goodby to you before leaving for my home Friday evening, also to the balance of your family and officials. However, I am glad I did get to stay through your meetings, and want to say I never appreciated a convention more in my life than I did the Columbus convention, and I believe the conventions in the future are going to be of more benefit and more appreciated by all concerned.

With kind personal regards and best wishes for your success, I remain, Yours very truly,
Zanesville, Ohio. R. O. BURTON.

Kept at Home by Sickness.

Dear Mr. Secretary:

We are very glad to hear that you had a good convention and regret much that we could not show up there, for reasons previously mentioned, namely, the flu. We are five times as busy here as we have ever been before, and instead of prowling round the country are all sticking here trying to get out stuff, and with considerable degree of success. Capacity is being increased and everybody is working who has not the flu. Hope our friends who visited the convention did not take it for granted that we were out of the business, for we are not. We are pleased to enclose check covering dues, and with regards, remain, Yours very truly,
Statesville, N. C. J. C. STEELE & SONS.

Sees Great Benefits from the Convention

My Dear Mr. Randall:

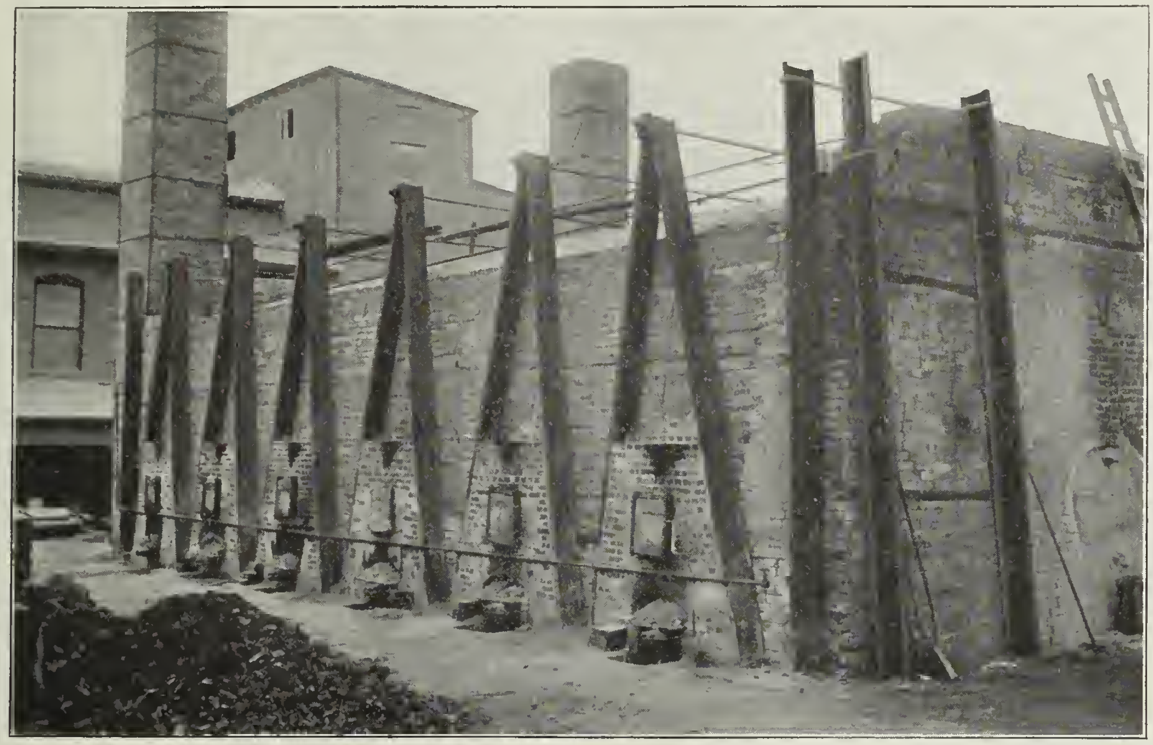
I am safe at home and trust the memories of the convention at Columbus must be to all, as to me, pleasant. The forward-looking conditions of the business seems to promise good results if bricklayers will arrange with contractors for a policy of steadying the situation. In old times we all remember the bricklayer as the embodiment of integrity. He made no strikes, but was the force on which all might depend for good business. We hope for his quick return to that method.

(Continued on page 278)

This Picture Shows

An Installation Complete, Ready to Operate, of

Furnace Gas Producers



Furnace Gas Producers on Standard Brick Co. Kiln, Crawfordsville, Ind.

Note its Simplicity==Can be Installed Between Burns

25% to 45% SAVED

In Time and Fuel on Plants Now Using It.

Try it Out on One Kiln.

International Clay Machinery Co.

DAYTON, OHIO

CONVENTION ECHOES.

(Continued from Page 276)

All the papers read, all the arguments and all discussion of the matters before the convention were treated with a broad and developing view. The result will be of advantage.

Good luck to you and to all our members.

Fraternally yours,

New York, February 27, 1920. WM. K. HAMMOND.

His First N. B. M. A. Convention

My Dear Mr. Randall:

I wish to thank you for the many courtesies extended me during the convention last week. Also will say that you are entitled to great praise for staging such an affair. Hope to attend your next convention. Very respectfully yours,

Shoals, Ind., February 23, 1920. J. B. LLOYD.

Promises 100 Per Cent. Attendance at Future Conventions

My Dear Mr. Randall:

Beg to advise we all arrived home safe and sound from one of the best conventions we ever attended, and I want to say right here that I now believe in these conventions more than ever. We had a representation of ten members of our organization registered at the convention and I do not believe we have ever in our existence spent money more advantageously than in having our men in attendance at this convention. While not so many numerically as some we have had in the past, yet to my mind it was 100 per cent. interest and efficiency. We feel that we were amply repaid by having our superintendent and foremen there to hear the discussions and lectures, also to meet the many representatives of the various machinery manufacturers and kiln construction people. We want to see this interest kept up, and we believe if all the brick industries would send more of their superintendents and foremen they all would be largely benefited, as the interchange of ideas and the conferences of these men are bound to bear good fruit, hence the value of the brickmaking industry. In fact I feel that I would rather have our men who have charge of the management of the plants there to hear the various discussions and meet the representatives of the various industries than to be there myself, as I feel we would get more out of it. All our men are talking the convention over with each other and already are looking forward and awaiting the announcement as to where the next convention is going to be held. So, my dear Mr. Randall, you may count on the Burton-Townsend Company having 100 per cent. representation at the next convention.

Kind personal regards and best wishes for your continued success. I remain, Yours very truly,

WM. H. LUCKTENBERG, Gen. Manager.

Zanesville, Ohio, February 28, 1920.

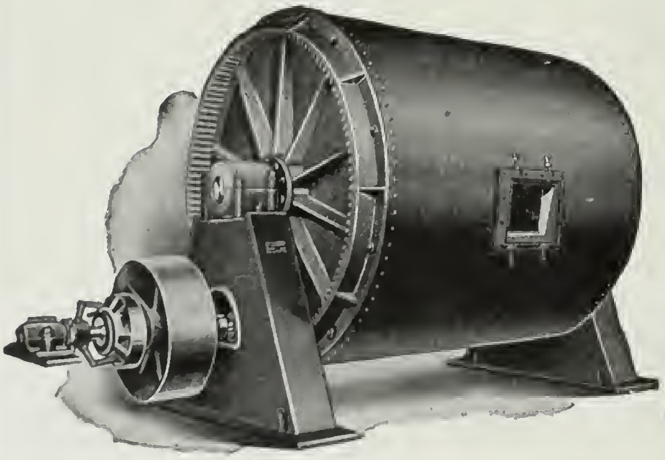
AUTO AND TRACTOR HOUSING.

The widespread use of automobiles, trucks and farm tractors is leading to extensive housing requirements for these vehicles. There is a housing problem here almost as serious in its way as the housing problem of humanity. These things cost so much the owners cannot afford to expose them to the elements, but they must be housed and cared for. As a result there is very active plan development for this type of housing. Logically these houses should be fireproof and permanent. Cheap sheds and shacks are no longer possible, even if they were desirable, because the cost of lumber is high. Eventually these structures will be built of brick, hollow building tile or cement, and the sooner the brick and tile people get actively after them the better will be the trade and the outlook for this class of building.

This "B" style Crossley Mill is made in 2 sizes—

4-ft. 6-in. and 6-ft. 8-in. It is lined with silex, hickory or porcelain as ordered.

Driving pulley is fitted with friction clutch—operator can start and stop the mill in any position.



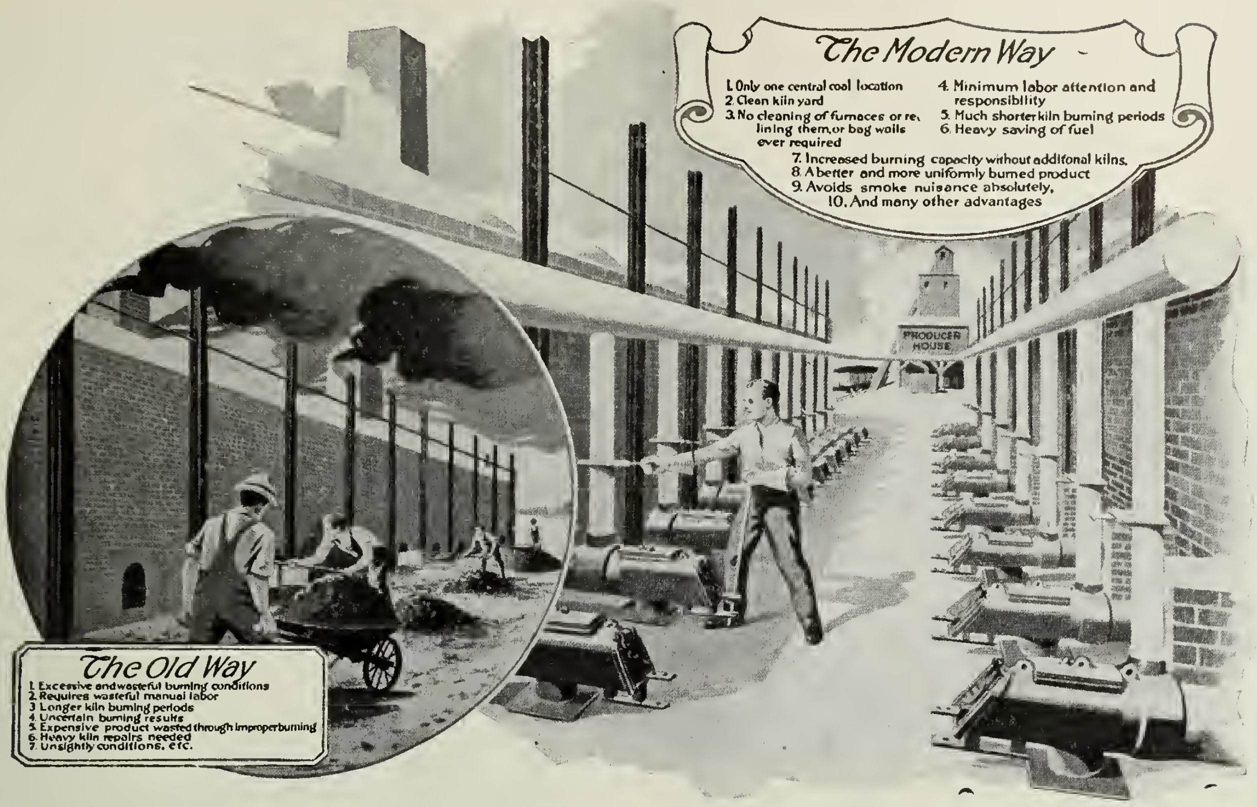
Hardened and ground roller bearings—

enclosed in a dust-proof casing make for an appreciable saving in fuel and power; and hold down the up-keep cost.

The Crossley No. 9 Ball Mill may be placed on floor without foundations. Motor may be set on base plate for gear or chain drive.

Write for our catalog. 200 pages devoted to illustrations and descriptions of clay working machinery.

The Crossley Machine Co.
(Inc.)
Trenton, N. J. U. S. A.



The Modern Way

1. Only one central coal location
2. Clean kiln yard
3. No cleaning of furnaces or relining them, or bag walls ever required
4. Minimum labor attention and responsibility
5. Much shorter kiln burning periods
6. Heavy saving of fuel
7. Increased burning capacity without additional kilns.
8. A better and more uniformly burned product
9. Avoids smoke nuisance absolutely,
10. And many other advantages

The Old Way

1. Excessive and wasteful burning conditions
2. Requires wasteful manual labor
3. Longer kiln burning periods
4. Uncertain burning results
5. Expensive product wasted through improper burning
6. Heavy kiln repairs needed
7. Unsightly conditions, etc.

THE DAY OF FIRING KILNS BY HAND IS PAST

Hand firing kilns in most clay plants is tremendously wasteful. You are dependent on human element by hand firing—that means longer time than necessary. It is also impossible to get complete combustion by hand firing, and this results in a big percentage of fuel waste; besides, hand fired furnaces require many men where the plant is reasonably large, which are high priced and hard to get. Both of these problems and many others, too, are solved completely by the

UNDERWOOD PRODUCER GAS SYSTEM
(Patented)

This highly efficient patented equipment puts an end to wasted fuel by getting the very last unit of heat out of each ton of coal. It saves as high as 30 to 40 per cent. of coal, and similarly in labor in comparison with hand fired methods.

Our Gas System saves fuel because of its distinctive patented construction, insures completeness of combustion. It puts the maximum of generated heat in the kiln, thereby saving a big percentage of the heat energy that in hand fired furnaces is wasted in many different ways. Our Gas System cuts the cost of fuel requirements in another way by reducing from 40 to 50 per cent. of the time required for water smoking and burning, and it eliminates the smoke problem entirely.

The degree to which our Gas System saves labor is demonstrated by the fact that the coal can be brought from the railroad cars direct to the gas producer platform automatically, thus not only eliminating man-power, but also horses, carts, trucks, etc. Moreover, one man per shift can look after the burning of a dozen kilns and do it far better than six or seven men by hand firing.

Our Gas System reduces kiln investment when a greater burning capacity is desired or required, for it will accomplish with six kilns that which requires eight kilns when hand fired, and at the same time prolongs the life of the kilns indefinitely since furnaces do not burn out, bag walls are not melted down, crowns are not wrecked, there are no furnace irons to burn out, no furnaces to clean. Our Gas System has plenty of reserve capacity. It requires no auxiliary draft equipment. It is a time tested device that is already saving money for scores of well-known concerns, and has proven beyond any doubt the most profitable piece of equipment ever installed in a clay plant.

Peace did not end the labor or transportation problems by far. Coal must be conserved, and the labor end controlled, so take the step now that will help insure maximum efficiency in your plant, and send for full facts about the Underwood Producer Gas System. We can save you money—let us show you how.

The Manufacturers Equipment Co.
Dayton, Ohio, U. S. A.

REVISED FREIGHT RATE FOR BRICK MEN OF INDIANA AND ILLINOIS.

The Indiana Public Service Commission early last month received from the Interstate Commerce Commission an order grouping brick producers in a number of Illinois and Indiana cities and placing in effect a uniform rate for the group of $1.40 a ton on brick other than common brick to Chicago. Chicago is the largest competitive market. The rate is to eliminate discrimination against Indiana producers until the Interstate Commerce Commission can hold a hearing on the general brick case.

In the group planned for the common rate are: Danville, Galesburg, Decatur, Springfield, Ill.; Crawfordsville, Veedersburg, Attica, Cayuga, Hillsdale, Clinton, Terre Haute and Brazil, Ind.

"We have found undue prejudice clearly exists against Indiana producing points," the order of the Interstate Commerce Commission says.

BURSTED BUBBLES.

Reports of a recent gathering of sash and door men contain a statement from a prominent man that lumber prices are too high, which, added to the scarcity, is decimating some recent building projects announced. It is cited, for example, that the Studebaker Corporation, which had planned to build 5,000 homes at South Bend, had cut the number to 200; that the Oliver Company, which originally planned to build 1,000, had cut the number to 100. These instances may be taken as illustrations of how some building bubbles have been squeezed down to small dimensions. They indicate that high prices do contribute to restricting building operations, especially when, as is usually the case, they accompany scarcity of material. The present indications are that many proposed building propects will be materially trimmed down. But even at that there will probably be as much building as there is of material, and the larger per cent. of building with brick and hollow tile.

TRADE NOTES.

The Globe Brick Company, of East Liverpool, Ohio, was recently incorporated by Fred G. Portro and J. Wess Portro, who will erect a plant for the manufacture of fire brick.

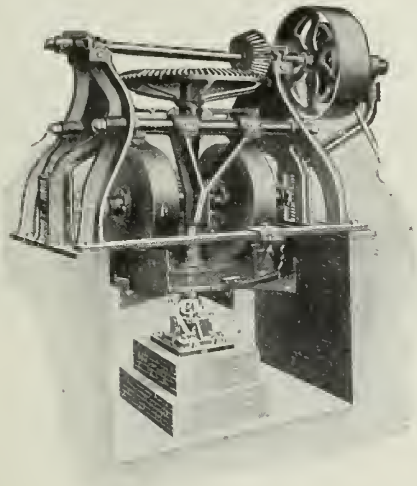
The Summitville Clay Products Company, of Youngstown, Ohio, has been incorporated with $150,000 capital stock by J. B. Morgan, G. F. Hammond, W. P. Barnum and others.

Application has been made for a charter for the Burton Clay Products Company of Altoona, Pa. The company will mine clay and manufacture brick, tile and other clay products. R. C. Burton, Joseph Thorp, E. L. Study, John G. Clemson and others are interested.

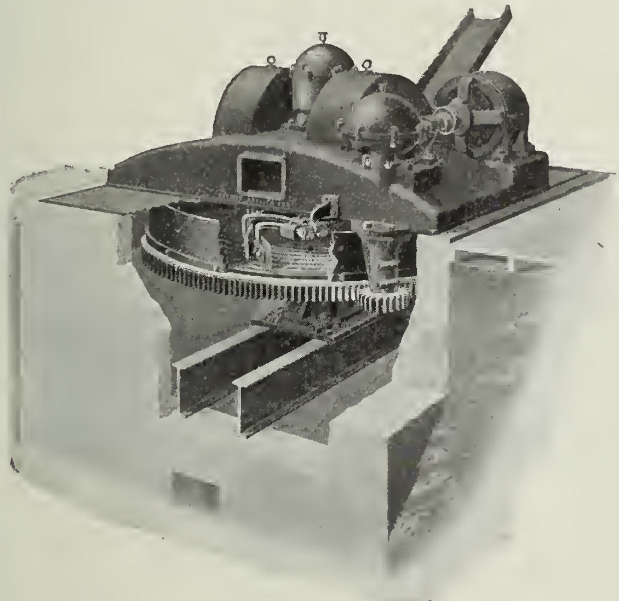
M. S. Stewart and C. E. Griner have organized the Cairo Brick Company at Cairo, Ga. The company will start out on a small scale, manufacturing only 15,000 to begin with, and will make culvert pipe as well as brick. Messrs. Stewart and Griner are contractors and builders. Ground has already been broken for the plant.

The brickmaking factory of Pollard Bros., of Edmonton, Canada, which was closed down at the beginning of the war, has been overhauled and put in operation. A new company has been incorporated and will operate under the name of Pollard Bros., Ltd. Many changes and improvements are being made in the plant. The city of Edmonton has fully recovered from the slump in building trades caused by the war and many buildings will be erected the coming summer. Indications are that the demand for brick will exceed that of any previous year.

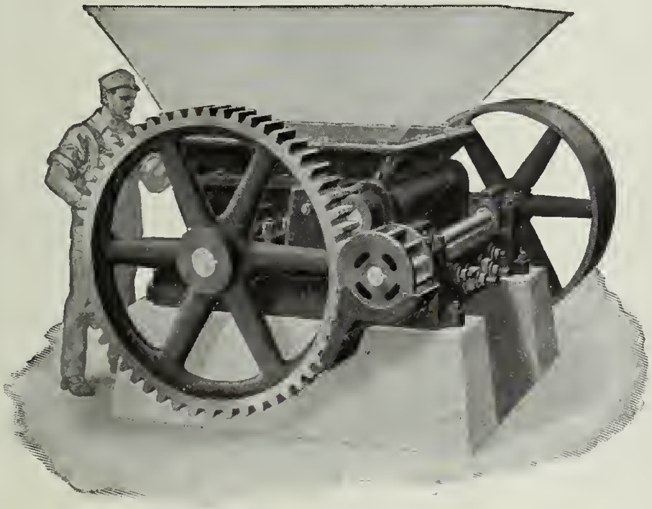
Common Sense
Suggests the One Remedy for all your Firing Troubles-
Our Engineer-experts are at your service- let them advise you-
write us now!
The J. B. Owens Continuous Railroad Tunnel Kiln stands for 100% SERVICE!
THE J. B. OWENS
THE KILN SUPREME
The J. B. Owens Continuous Tunnel Kiln Co.
Suite 300, Westinghouse Bldg., Pittsburgh, Pa.



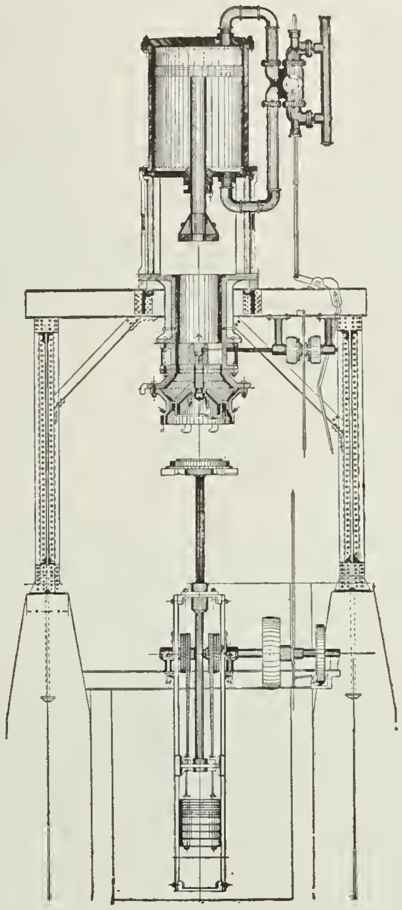
Standard Grinding Pans Made all Sizes



Model A-300 Step Bearing Type Dry and Semi Dry Grinding Pan



Single Roll Crusher



Sewer Pipe Press

Machines for
Crushing,
Grinding,
Pulverizing,
Empounding,
Tempering,
Mixing and for

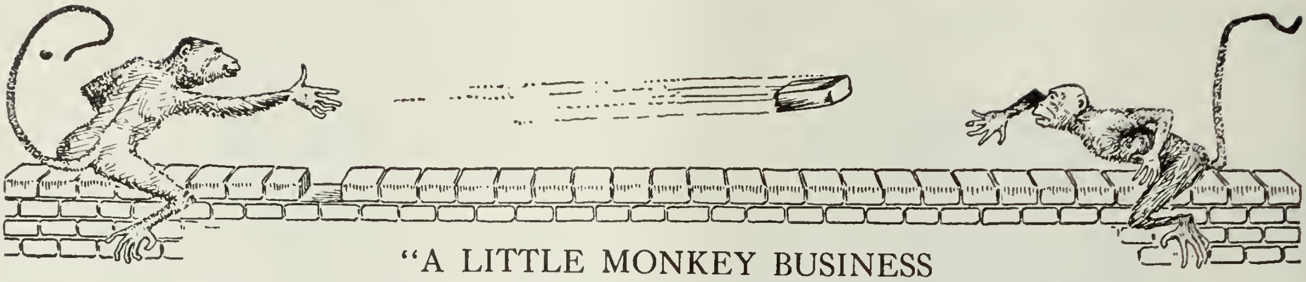
Elevating and Conveying all kinds of Materials.

Steam Presses for Making Sewer Pipe, Drain Tile, Hollow Block, etc., are Manufactured by

THE STEVENSON CO.,

Gen'l Office and Works **Wellsville, Ohio**

Engineering and Western Sales Office,
Monadnock Bldg., Chicago, Ill.



"A LITTLE MONKEY BUSINESS NOW AND THEN IS RELISHED BY THE BEST OF MEN."

TRUE BLISS.

The Pessimist—The best luck any man can have is never to have been born; but that seldom happens to any one."—Boston Transcript.

WORSE.

Surgeon at a New York Hospital—What brought you to this dreadful condition? Were you run over by a street car?

Patient—No, sir; I fainted, and was brought to by a member of the Society of First Aid to the Injured.

NO ARGUMENT.

A man stepped up to Henry Ward Beecher one day and said, "Sir, I am an evolutionist, and I want to discuss the question with you. I am also an annihilationist; I believe that when I die that will be the end of me."

"Thank goodness for that!" said Mr. Beecher, as he walked on and left the man dazed.—London Blighty.

HIS TRAINING.

"My man, where did you become such an expert swimmer?"

"Why, lady," responded our hero, modestly, "I used to be a traffic cop in Venice."—Buffalo Express.

NOW SHE REFUSES TO SPEAK.

She—So many men marry for money. You wouldn't marry me for money, would you, dearest?

He (absently)—No darling; I wouldn't marry you for all the money in the world.

A FINANCIER.

Gentleman—What would you do with a nickel if I gave you one?

Tramp (sarcastically)—Get a new rig, mister, an' some supper an' a night's lodgin' an' breakfast an' dinner tomorrow.

Gentleman—My good fellow, take this quarter and support yourself for the rest of your life.—Chicago Herald.

The BUCKLEY SYSTEM for Drying Clay Products.

During the past year this system has demonstrated its value to over twenty general ware and electrical porcelain manufacturers.

We originated AUTOMATIC STOVE ROOMS, MANGLES and CONDITIONING MACHINES that were installed in various plants during the year 1919.

Why not avail yourself of the opportunity of having our experts, with twenty years' practical clay experience, investigate your problem?

Write us for a list of enthusiastic users whom we will gladly give as references.

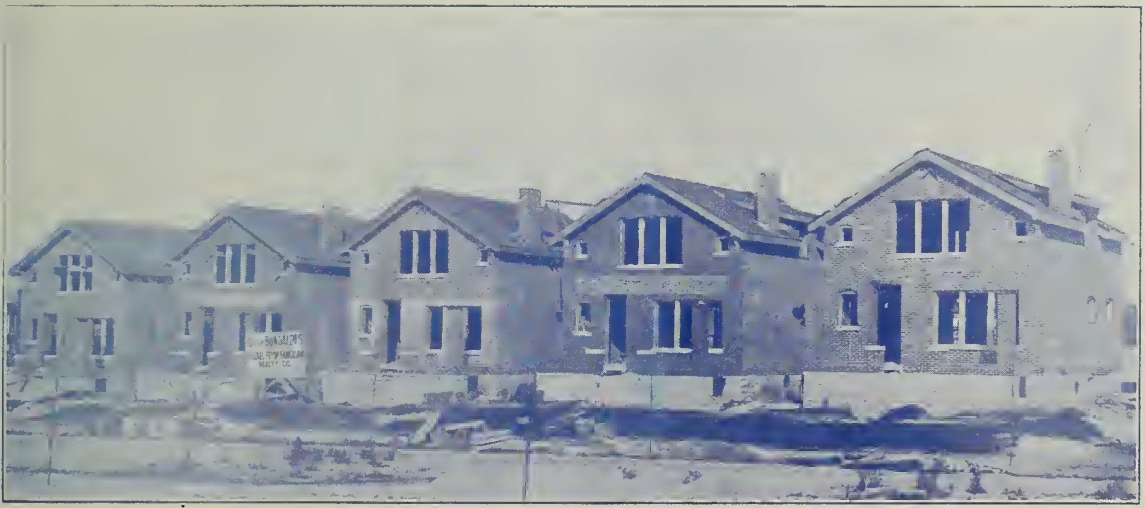
CERAMIC EQUIPMENT COMPANY

Clay Drying Specialists. Trenton, N. J.

aug

MARCH 25, 1920

THE CLAY-WORKER



THE HOUSING PROBLEM: A Group of Six Room Bungalows of Brick In Course of Construction at St. Louis,—See Page 335.

Published Monthly by
T.A. RANDALL & CO.
INDIANAPOLIS, IND.
OFFICIAL ORGAN OF THE N.B.M.A.

Published monthly. Subscription price, $2.00 per year. Entered as second class matter, January, 1884, at the post office at Indianapolis, under the act of March 3, 1879. Title registered and contents Copyrighted by T. A. Randall & Co., 1919.

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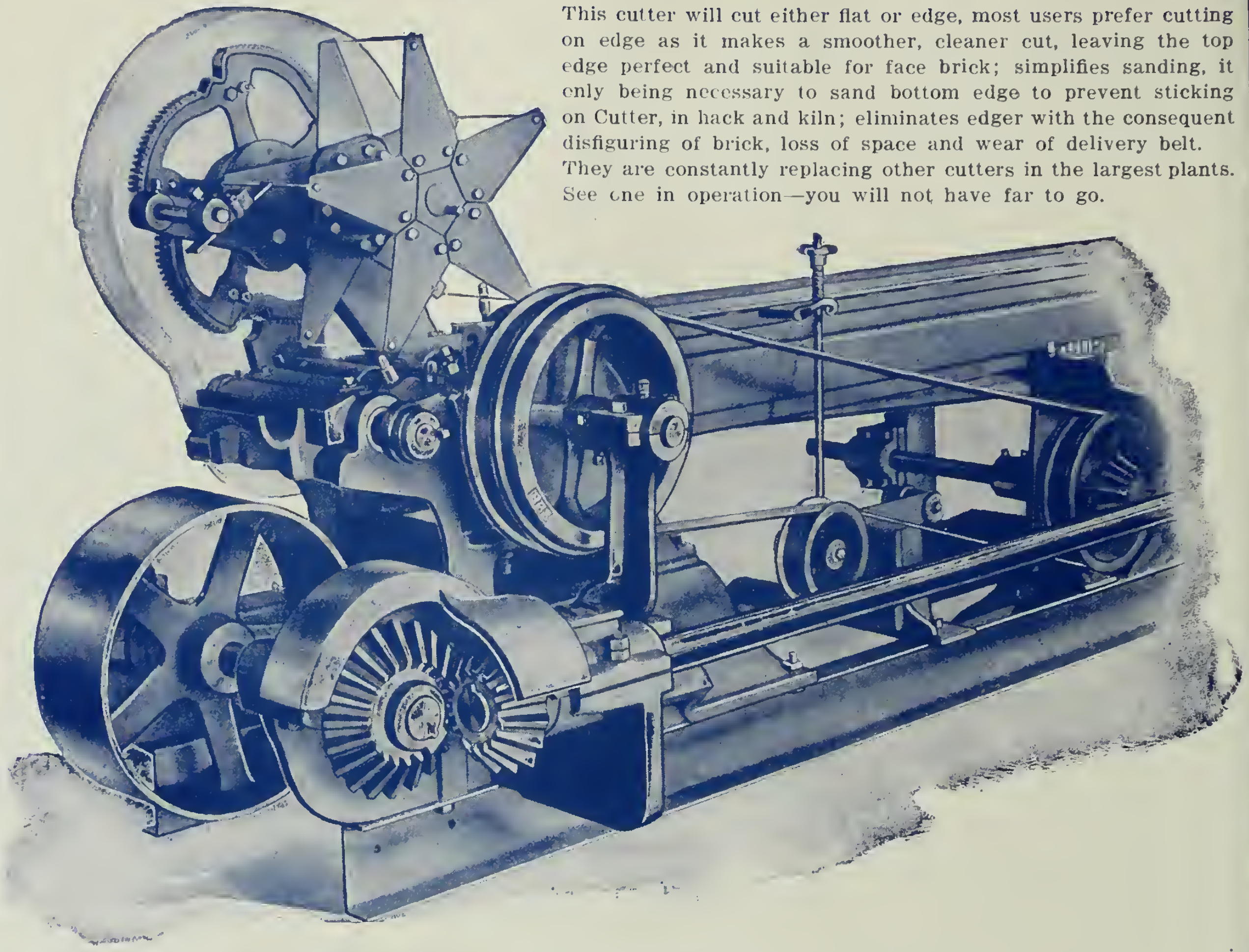
It Pays Well to Be On the Square,

Especially to Cut Your Brick Squarely

This is Exactly What the Steele Cutter Does and Continues to Do.



This cutter will cut either flat or edge, most users prefer cutting on edge as it makes a smoother, cleaner cut, leaving the top edge perfect and suitable for face brick; simplifies sanding, it only being necessary to sand bottom edge to prevent sticking on Cutter, in hack and kiln; eliminates edger with the consequent disfiguring of brick, loss of space and wear of delivery belt. They are constantly replacing other cutters in the largest plants. See one in operation—you will not have far to go.

WHAT THEY SAY

Just a Few of Hundreds of the Same Kind We Have Received

W. E. DUNWODY, V. P,, CHEROKEE BRICK CO., Macon, Ga.: "I think yours is the best cutter in existence. That is putting it about as strongly as I know how, and if you know any stronger way to put it, write me, and I will affix my signature."

BIBB BRICK CO., Macon, Ga.: "The two Rotary Automatic End Cutters installed for us about a year ago have given perfect satisfaction, and have not even required adjustment since putting them in. Our bricks are in much better shape than when we used the other cutters, cutting flatwise, the ends are always square, and bricks are not bruised as when we used edger. There is quite a saving in wires, as they do not break so frequently, cutting the narrow way."

SHREVEPORT BRICK & TILE CO., Shreveport, La.: "Your brickmaking outfit with feeder and car system, which we have operated three years has given perfect satisfaction. We really believe your cutter to be the best on the market."

Our Automatic Side Cutters Are Just as Good

J. C. STEELE & SONS **Statesville, No. Carolina**

CLAY WORKING MACHINERY

Western Representative: Geo. H. Smith, 3309 E. 37th. St., Kansas City, Missouri
Northern Agents: The Manufacturers Equipment Co., Dayton, Ohto
Eastern Agents: Carter Engineering Co., 39 Cortlandt St., New York City

THE CLAY-WORKER

THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 73. INDIANAPOLIS, MARCH 25, 1920. No. 4

THE HOUSING PROBLEM: Modern, Moderate Cost Brick Homes Offer the Best Solution. The Building of Permanent Homes for Workmen an All Important Matter to Manufacturers who Employ Many Laborers.

ONE OF THE most serious problems now confronting the people of the nation is the housing problem. There is a painful shortage of houses made manifest by high rents, and an inability to obtain desirable homes or apartments at any price. This is particularly true in large cities where the renter of moderate means now finds a satisfactory home cannot be had at any reasonable price. Rents have been advanced from 50 to 100 per cent. The latter smacks strongly of profiteering, but there seems to be no means of escape until more homes can be erected.

The moderate cost brick home is more in demand now than ever before, notwithstanding the high cost of building materials. We are pleased to illustrate a number of substantial brick homes that have recently been built or are in course of construction at St. Louis, always a city of brick homes, but evidently destined to be more so in the future. We are indebted to Joe Stocke of the Progress Press Brick & Machine Company of that city for the accompanying photographs. The brick for the buildings were supplied by Mr. Stocke's company, and the front brick are mostly the "Success Matt Brick" which are very popular with architects and builders in that locality.

For many years nearly all of the brick made in St. Louis were made by the dry press process. With the

Types of Modern Brick Homes at St. Louis, Mo., Faced with Dry Press Rough Texture Brick.

advent of the rough texture brick it seemed that the local manufacturers would be compelled to replace the dry press equipment with other machinery or go out of business so far as front brick were concerned, but necessity, the "mother of invention," came to the rescue. A device was invented which attached to dry press brick machine, produces a very excellent rough texture brick, with practically no additional cost. The device is shown on page 319 of this issue, as it is in operation at the plant of the Progress Press Brick & Machinery Company, St. Louis, the output of which is mostly dark red brick and these when laid in the wall are very attractive.

As was remarked at the recent National convention, there is "An Abiding Charm to a Brick Home." This is now better appreciated by home builders than ever before. The brick of today are superior in every way; in strength, in uniformity of shape, durability and beauty of color. The building world has never had anything quite as good as the brick that are being manufactured now by modern processes. The building of such brick homes as those illustrated is a permanent addition to the wealth of a community. Ruskin put it aptly when he said:

"Therefore, when we build, let us think that we build forever. That it not be for present delight, nor for present use alone. Let it be such work as our descendants will thank us for, and let us think, as we lay brick upon brick, that a time is to come when those brick will be held sacred because our hands have touched them, and that men will say as they look upon the labor, and wrought substance of them, 'See this our fathers did for us.' "

A Hoosier Housing Project of Great Promise.

A new organization in the motor world, the Lafayette Motors Company, of Indianapolis, is to build an immense factory in or near that city. Realizing they will be badly handicapped by the shortage of labor required in the construction of the plant and the operation of same when completed, they have hit upon what seems to promise an effective means of meeting the emergency; a plan that will enable them to get and keep a sufficient force of workmen to carry on the great enterprise. They are going to provide suitable homes for their workmen located in the vicinity of the plant. To do this, the company has incorporated a separate million dollar building company to erect model homes in the vicinity of their plant for the use of employes. These homes will be subject to rental or purchase, according to the wishes of the employe.

Those who desire can purchase a home on the installment plan at the actual cost of same, plus the interest on the investment and on terms that will enable the mechanic to buy and own a desirable home at a monthly outlay that will be little, if any, more than he would pay in rental under ordinary conditions.

The benefits of this plan are many, not the least is that it will stabilize or make permanent the workmen, for owning their own homes they will have a direct interest in the welfare of the company. Workmen who own their own homes are, as a rule, dependable and are less apt to be influenced by labor agitators than ordinary transients who come and go as the whim of the moment dictates. The plan should appeal to all large employers of labor, and if followed generally would soon relieve the stress of housing conditions. These conditions prevail in all large industrial centers, from the greatest, New York City, to the least.

An illustrious example is that of the U. S. Steel Corporation of New York City, which has completed plans for the erection of homes for its employes on a cost and easy payment basis which it will recommend to each of its subsidiary organizations as a model for housing program at every plant, it was learned here today. The proposed homes include wood, brick, stone and stucco structures, with prices ranging from $3,000 upwards. These

Modern Brick Dwelling St. Louis.

will be sold to workers at 10 per cent. down and the rest in installments extending over a ten-year period. Outright purchase or payment of larger installments will be allowed. Absolute title to the property will go to the worker on his final payment.

Such plans carried out effectively will be of inestimable value in every community where they are in operation and, too, prove of great advantage both to employer and employe. If the homes are built of brick, as they should be, they will be, as we have said before, a permanent addition to the wealth of the community and prove a factor in settling the spirit of unrest which now prevails so generally and seems to be a menace to the common weal.

"OPEN PRICE" UNDER THE BAN.

IT WILL PROBABLY be something of a shock to those who have been enthusiastically following the open price plan of competition through association work to hear that this plan, which every one thought was legal and had the approval of the Federal Trade Commission, has been put under the ban by a judge of the U. S. Court.

Federal Judge McCall of Memphis has enjoined an association of hardwood lumber manufacturers from further use of what is known as the open price plan of reports. This is not the worst either; there is an intimation comes from the Attorney-General's office that other organizations following this plan are to be estopped.

There is still a little hope for the open price idea founded on the theory that in the case referred to there were some provoking circumstances and incidents in the form of departure from the straight-forward idea of open price reporting. It all raises a question, however, and creates some apprehension about the advisability of following further open price plans in association, that is, the reporting through a central bureau of sales made and prices obtained.

The government attitude in this matter seems both inconsistent and discouraging. If commercial organizations are to be enjoined from price reporting it leaves them in a confusing position. It is not easy to see a way clear to gathering and distributing information that will be both legitimate and worth while.

Perhaps in time there will be a clearing of the atmosphere so that we can see the way better, and if the Federal Trade Commission will see its duty right we may yet develop a spirit of proper co-operation between trade organizations and the government. At present, however, the outlook is far from satisfactory.

THE SELLING END.

While conditions in the brick and hollow building tile trade have been such lately that no special selling talent or effort was required because the demand exceeded the supply and the buyers have been coming after the stuff. This is a condition which will not always hold. Broadly speaking, the selling end of the business is one of more importance now than in bygone days, and it should be kept in good shape and ready for prompt service when needed. In this connection we should not overlook the fact that the dealer is a great factor in promoting modern ideas in brick and tile salesmanship. The dealer has earned a right to a place as a factor in the selling end of the game, and in so doing has inspired a better order of salesmanship in the clay workers themselves.

Attractive
Brick
Bungalow
St. Louis.

FAITHFUL SERVICE APPRECIATED.

At the annual meeting of the board of directors of the Chestnut Ridge Corporation, which owns the big plant at Kunkletown and a large tract of mineral land, James G. Beemer was elected president for the seventeenth time and Miles W. Beemer, his son, was elected vice-president. James G. Beemer, Jr., another son, is in charge of the Kunkletown property. It looks very much like a Beemer corporation principally.

OFFICIAL REPORT OF THIRTY-FOURTH ANNUAL CONVENTION OF THE NATIONAL BRICK MANUFACTURERS' ASS'N, COLUMBUS, O., FEBRUARY 18-20, 1920.*

(Continued from the March 12 issue of The Clay-Worker.)

THIRD SESSION.

Friday, 10:00 A. M., February 20th, 1920.

President Hammond: Good morning, gentlemen. Please come to order. Secretary Randall wishes to make an announcement.

Secretary Randall: We have had a pretty strenuous week, and some of our fellows have slipped away. Still there are more than a hundred here, enough of us left to have a good session. I am going to take the pleasure of introducing to you this morning a young man who comes to us a stranger. He came to us something like a hundred years ago, and played a prominent part in our organization work, was very active in all the good work of the association. He is seemingly just as young now as he was then. I want to introduce to you Mr. W. A. Eudaly, the first president of this association. (Applause.) He served as president of this association in 1886. A man who carries ninety years (laughter) as gracefully as he does is good to look at. (Applause.)

President Hammond: Mr. Eudaly, come right up on the platform. I want to introduce you to the convention.

The Return of W. A. Eudaly.

W. A. Eudaly, Middletown, Ohio: I learned to do whatever I was told to do some years ago. I have attended as many clayworker conventions of one kind and another as any man in this house, save possibly Mr. Randall. In the beginning, I used to belong to the Indiana Brickmakers' Association, and Illinois and Michigan, Iowa and Ohio, and, in fact, all of them. I am really glad to be here. It is marvelous how you have maintained your youth, so many of you. There on the back row, just like I used to see twenty-five years ago, is a group of young men, just as pert and fresh as they were years ago, when I first attended conventions. If I had any idea how many hours you wanted me to talk, I would know better what to say. I am quite proud of this organization. I am real proud of it. I am one of three men who started it. I am really proud of the things the National Brick Manufacturers' Association has done. I came in yesterday afternoon and have been thinking very much of the progress this association has made. It is marvelous how this association has maintained its dignity all these years, with all the other lines of manufacturing industries in this country. It is just really marvelous for several reasons. This association was not in the beginning based on any financial idea of betterment or of holding prices together, or of anything of that sort. It is based on the idea of doing better things and the knowledge that the members of this association gains from year to year is brought to the convention and distributed, not only from the convention platform or the floor of the convention, but in the lobbies here about. It is this pure minded, pure spirited idea that has prevailed all these years from the very beginning in this association that has made it the great power it is in this country. You don't realize it, perhaps the younger ones of you, what a power this association is in the land. It is a wonderful power and the sentiments that it creates and makes from time to time is marvelous. As I said, I am delighted to meet with you, I was pleased to be at the banquet last night, though I could not stay until the end. I perhaps should give you the reason why. I married a woman recently residing in this city, who is president of the Ladies' Chamber of Commerce of Columbus, and they are having a conference here today preparing for a great meeting next June, and she had to go to meet with some other ladies from other cities, so we had to leave a little early. But the meeting was going fine when I left, and at the pace it was going I don't see how it could have run down much before one o'clock. But the spirit of that and the whole convention has been fine and I am much pleased to have been with you. (Applause.)

President Hammond: It is a pleasure to listen to this young man, the first President of the Association. I hope it may be my good fortune to appear as youthful and speak as forcefully when I reach his ripe age, as has Mr. Eudaly. I think we have made a good beginning for a busy session. It is gratifying to see so many of you present after the strenuous pleasures of yesterday. We will have for the first formal offering this morning a paper by Mr. Walter A. Hull, who comes to us from the Bureau of Standards, Washington, D. C.

SIDE LIGHTS ON FIRE PROTECTION.

BY W. A. HULL, PITTSBURGH, PA.*

Mr. President and Gentlemen of the Convention:

For a number of years the brick manufacturers and the other manufacturers of clay products of this country have been brought in touch with the Bureau of Standards through the Clay Products Section, now a part of the Division of Ceramics, under the direction of Mr. Bleininger. There is anther section of the Bureau of Standards whose work has come to be of special interest to those connected with the industries which are producing fire-resistive building materials. This is called the Fire Resistive Section, and its function is the study of the fire-resistive properties of building materials. The purpose of this paper is to show the relation of the work of this section to the national problem of fire protection and to give a condensed account of the work that has been done and is being undertaken in its particular field.

In 1776 the American people revolted against a tax. It was an extremely small tax; it would not have been burdensome to pay it, but it was abhorrent in principle. The American people of today are paying, without protest, a special tax of our own levying that is heavy enough to be a burden on many of us. The difference seems to lie in the fact that that little tax on tea was announced by royal proclamation and talked about in every family in the land, whereas this greater tax that is being paid so complacently at the present day is camouflaged so that we do not see it unless we take the trouble to look closely. The head of the American household does not go, once a year, to the collector of taxes and pay, for himself and his family, his annual quota of tax to pay for the property that has needlessly been burned up in the country during the preceding year; what he really does is to add just a fraction of a percent to the amount of every check that he writes, to include his contribution to the big pool that is to settle that bill. These checks go to the butcher, to the grocer, the clothier, the landlord, and every other sort of business man, to help meet the cost of his insurance, so that the insurance companies can guarantee him against loss. Now there is nothing so very bad about the principle of this; it is better that every citizen should contribute a little than that the unfortunate family or business man who gets burned out should lose all. The trouble with the system is that too many families and business men are getting burned out. Knowing that the insurance policy will stand between him and ruin if he has a fire, the business man does not exercise sufficient precautions against being burned out; his workmen do not and his customers do not; and the result inevitably is that all of us, those who are careless and those who are not, have to dig down about four times as deep to meet our quota to pay for the big annual bonfire as we would have to do if everyone were to do his part, his reasonable duty to prevent the needless waste of property and of human life, by fire.

Evidence is abundant to show that a very great part of the destruction of property in this country, and with it a frightful attendant loss of life, is the result of carelessness and indifference on the part of our citizens. To show the truth of this statement it is only necessary to quote from the public utterances of men who are devoting their energies to the widespread, organized campaign that has been carried on all over this country for years to stop this needless dissipation of our resources. It may be said that without this campaign, without the enthusiastic devotion of many men who have made this their life work and of many others who have given time and energy to it as a patriotic service, our present situation might be immeasurably worse.

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*By permission of the Director of U. S. Bureau of Standards.

The Significance of Fire Waste.

Franklin H. Wentworth, Secretary of the National Fire Protection Association, in a recent address at Los Angeles, says: [1] "And sixty per cent. of this waste is easily preventable. It represents an individual irresponsibility that is criminal. It is manifested by acts day after day of amazing recklessness that should be punished as other crimes against public welfare are punished. Last week in Hamilton, Montana, the principal hotel was destroyed by a carelessly thrown cigarette. The other day in Boston a Harvard College student, coming out of a theater, lighted his pipe and threw the burning match into the lace dress of a woman, setting it on fire. Yesterday a man threw a match at the foot of a lace curtain in the St. Francis Hotel in San Francisco, igniting it. The wreck of a five hundred dollar plate glass window was the result.

"One of the biggest fires in the East last year, with a $500,000 loss, was in a department store. Along side of this four-story structure was a wooden, ramshackle hotel. Anybody knew if the hotel were to catch fire it would burn the department store building, so the owners put standard shutters on all windows on that side of the building and closed the shutters every holiday and over every Sunday. But this fool fire started on Thursday! A $500,000 loss simply because the shutters were open when the fire started. Metal window frames and wired glass, while of course heat may radiate through them, are always on the job, while shutters, as in this case are frequently neglected. You can make the town of Los Angeles fairly conflagration proof by protecting the window openings of your brick, stone and concrete buildings."

The criminality charged by Secretary Wentworth is not confined to any one class of people, but his indictment against property owners is strengthened by the following statement which is also quoted from the address just referred to:

"I have seen some awful fire traps in schools in the West. For example, in Butte, Montana, a building owned by one of Butte's leading and wealthiest citizens—a five-story building (brick)—has two methods of egress. One is a ladder passing down the side in the alley; simply an iron ladder that no woman under excitement could possibly get down and very few men—passing down through a network of high and low-tension electric wires. The other exit is the center elevator, open all the way to the roof and around the elevator winds the only stairway. That building has offices and stores on the first floor; on the second, third and fourth floors are living apartments with all the domestic hazards of cooking, etc., including probably women cleaning gloves with gasoline; **and on the top floor there is a business college with six hundred boys and girls in it.** Can you imagine anything worse than that?"

One of the veteran campaigners against fire hazards is Captain J. J. Conway, Superintendent of the Cincinnati Salvage Corps. Let us hear what this experienced man, formerly a professional fire fighter, has to say about the responsibility of workmen in matters of criminal negligence.

Carelessness the Cause of Many Fires.

[2] "The most important thing is education; but whoever goes out to talk should drive home the fact that the thing that causes the great loss in this country is not visible except for a few minutes prior to the fire. It is some fool thing that somebody did unexpectedly. I had a fire in an electric works; the man's oven had gone bad that afternoon and he wanted to dry out an armature, so he takes a three-hole gas stove, sets it on the floor and bends a piece of sheet metal over it, lights it, locks up the factory and goes home. About 11 o'clock we went down there to a fire. Another instance; a $20,000 house beautifully decorated and handsomely furnished. The owner called in a tinner right after the coal heater there, with the wind blowing at the rate of thirty-five snow had melted away to fix an eave. The tinner left a charmiles an hour! Another fellow set three men thawing out water pipes. The 6 o'clock whistle blew, down went everybody and a $35,000 fire resulted! If we want to stop fires we must induce the people who own the premises to go over the ground fifteen minutes after the men have left."

Captain Conway tells how another fire that destroyed one of the best slow-burning buildings in Cincinnati was started.[3]

"The day before the fire they had got in three carloads of these great big globes you see in front of the gasoline filling stations, and it is their duty to ornament them, so that the work done on them is worth more than the article itself, and in the three carloads of globes there was over a carload and a half of excelsior. Through a cellar there was a string of electric lights turned on at the socket, but one of the men got in the habit, when he came upstairs, of unscrewing a fuse plug, thus putting all the lights out at once. He went home Saturday after doing this and the other men could not get the lights to burn and so they went to work down there with candles and matches."

Examples like this are all too frequent. It may be said, however, that the safety first idea is gradually gaining ground in this country. When we finally rid ourselves, if we ever do, of the attitude of mind implied by that obnoxious expression, **"I should worry,"** we shall make better progress.

Work of an educational nature is constantly being done by the National Fire Protection Association and other national organizations, by individual states and by municipalities, working in cooperation with the schools and with all sorts of local organizations. There is no doubt that this work is producing important results and that work being done now in getting information about how to prevent fires into the homes, through the schools, the women's clubs and other channels, will have a cumulative effect. It is almost amusing to see how easy it is for the people to understand these lessons and to put them in practice in emergencies. The following instances are sufficient to show what can be done when people really try.

Treasurer John W. Sibley,
Birmingham, Ala.

Secretary Theo. A. Randall,
Indianapolis, Ind.

Ex-President W. D. Richardson,
Columbus, Ohio.

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[1] "The Significance of the Fire Waste." Address at Los Angeles, October 7, 1919. Copies obtainable from National Fire Protection Association, Boston.

[2] Proceedings, Nat. Fire Prot. Assn., 1918, p. 40.

[3] Proceedings, Nat. Fire Prot. Assn., 1918, p. 38.

[4] "In 1913, the year of the flood, Indianapolis was without fire protection for four days, and Fire Chief Coots came out with a statement that the city was helpless and a fire must not be reported or the whole city would be in danger. There wasn't any fire at that time. For four days the city of Indianapolis, knowing it would be deprived of fire protection, safeguarded itself against the recurrence of fire, but immediately afterward, when the water service was renewed, fires came along in sufficient numbers to make up the average for the city."

The "Quarterly," of the National Fire Protection Association, quotes the following resolution, drafted by a citizens' committee of one hundred, organized during the strike in Winnipeg to assist the city in carrying on the public utility services:

"Whereas, The fire loss in the city of Winnipeg has reached proportions which place a burden upon the city's industries, prejudicial to its commercial interests; and

"Whereas, The city of Winnipeg has been singularly immune from fire during the strike of the firemen, and such immunity in the opinion of this committee is largely due to common precautions against fire taken by property owners, merchants and householders during the period of disorganization of the fire brigade; be it

"Resolved, That in the opinion of this committee adequate measures should be taken by the municipal or provincial authorities for the adoption and enforcement of legislation and regulation for the prevention of fires."

(Additional portions of this resolution are omitted.)

Fires Prevented by Public Caution.

At the time of the firemen's strike in Cincinnati the people were warned, through the newspapers, and during the eight days that the strike lasted there were only seven fires, with a loss of $566.34 against thirty-four fires with a loss of $32,744.26 during the same period of the previous year.

Evidence is also available to show that much improvement of a permanent nature can be effected by persistent, intensive effort. A report by Captain J. J. Conway, Superintendent of the Cincinnati Salvage Corps, who has been quoted in the foregoing discussion, shows that it took hard work, much of it discouraging, covering the period from 1891 to 1918, to bring the city of Cincinnati up to a creditable condition in this respect. Insurance undoubtedly has much to do with the indifference of the American public to the cost of carelessness. Captain Conway's report shows that insurance can be turned around to work the other way—as an incentive to improvement. It also shows that there is a definite relation between the fire hazards of a city and the insurance rates that the property owners of that city are required to pay. The report of the co-operation, in Cincinnati, between the various bodies contributing their services to the work, including the Chamber of Commerce, the city government and the fire department, is interesting reading. Among other things accomplished was the popularizing of a clean up and paint up movement, the adoption of a new building code, almost an exact copy of the building code recommended by the National Board of Fire Underwriters, the enforcement of building regulations, the adoption of inspection by members of the fire department and the condemnation and razing, by order of an efficient building commissioner, of 897 buildings in three years.

Without going into details as to rates, it may be stated that the reduction of insurance rates due to the improved conditions in the city of Cincinnati resulted in a saving of more than $850,000 a year.

There is one source of relief that should receive more general attention than has been given it and that is the matter of individual liability legislation. It is manifestly unfair to the citizens of a community to pay taxes for the maintenance for the benefit of those property owners who do not take reasonable precautions against conflagration conditions, of a much more expensive fire department than would otherwise be necessary; it is equally unfair for all property owners to pay high rates of insurance on account of the failure of some owners to safeguard their premises; it is particularly unfair for one property owner to be permitted to endanger the adjoining and neighboring properties of others by his criminal negligence. We seem to be coming to a changed legal situation in this respect. In some places we have it already and when a man tolerates preventable fire-breeding conditions and has a fire, he has to pay the city for the expense of putting it out. We have had one case in Brooklyn, in which a company was forced to pay the city $2,500 for the extinguishing of a fire. It has been demonstrated that most fires could be prevented. It seems right to exact a penalty in cases where owners have shown negligence.

A large part of the foregoing discussion has to do with the starting of fires. The importance of the nation-wide campaign for the improvement of our habits and our record, in this respect, is not likely to be overestimated. The fact must not be lost sight of, however, that "accidents will happen in the best regulated households," private, public and industrial. Fires will start and once a fire is under way, the extent of the destruction that it will carry with it, depends on a number of things, including the character of the building in which it originates and the character of the surrounding buildings. It has been charged, and on good grounds, that the fireproof building is not fireproof. No well informed, unbiased person claims that it is. **There is no such thing** as an absolutely fireproof building, but there are buildings, and there are going to be more of them, that are capable of going through any fire to which they are likely to be subjected without, what may be termed, structural damage, and the difference in cost between such a building and another building which is not so well safeguarded against fire damage is not necessarily great. Much depends on the designer's knowledge of the essentials of fire protection.

Until within comparatively recent years we have been a nation of builders in wood and in brick and wood. Then came the steel-skeleton frame buildings. It did not take long to demonstrate that steel, though incombustible, would fall an easy prey to heat unless adequately protected. The steel-frame building appears to be a permanent institution in this country, and the development of the art of constructing such buildings economically is one of our national achievements. The engineering information applying to the proper design of such buildings to secure safety under ordinary conditions, without excessive cost, is fairly complete. The same may be said in regard to the skeleton construction building of reinforced concrete. In the matter of resistance to fire, however, the engineering information is not so complete. Engineers and architects responsible for the design of buildings, and members of committees responsible for the drafting of building codes for the proper regulation of the construction of buildings, have to be governed to too great an extent by individual opinion, and individual opinion varies greatly in these matters.

H. C. Kleymeyer, Evansville, Ind.

We Should Cease Building to Burn.

The time has come when more and more of our building is being done with incombustible materials and the effectiveness of various types of construction in respect to their ability to resist fire will depend in large part on the completeness of the engineering information available as to the fire-resistive properties of materials and types of structures. It is the function of the fire-resistance section of the Bureau of Standards to add the results of its investigations to the existing information of this character.

That part of the work of this section which is of most immediate interest to manufacturers of building materials is the fire testing, not only of the materials themselves, but also of full-size building members. From these tests information is gathered which could not be obtained in any other way. The first testing that was undertaken in the Bureau of Standards was that of a number of light metal safes or cabinets, for the storage of records and their preservation against fire. A thorough study was made of the leading makes then on the market and a complete report, including drawings of the safes, descriptions of the methods of construction and insulation and of their performance in fire tests was prepared. This report was not published but was transmitted to the general supply committee of the government for their guidance in purchasing safes. It was also placed in the hands of the manufacturers of the safes tested.

The next undertaking was a series of tests on some of the most important materials used in fire-resistive construction. The results of this investigation have been published in Technologic Paper No. 130 of the Bureau of Standards, under the title: "A Comparison of the Heat-Insulating Properties of Some of the Materials used in Fire-Resistive Construction." The method used in this investigation was perhaps somewhat unique. It consisted essentially of the fire-testing of cylindrical specimens of the different kinds of material in a specially designed gas-fired furnace. The cylinders were made 8 inches in diameter and 16 inches long. Small holes running lengthwise through each cylinder at definite depths from the cylindrical surface made it possible to insert thermocouple wires for the determination of temperatures. Temperatures were measured at frequent intervals during the fire test and from the data thus obtained it was possible to make comparisons of the protection against fire that would be afforded load-bearing structural members by coverings made from materials belonging to the same classes as those tested.

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[4] Proc. Nat. Fire Prot. Assn., 1918, p. 37.

One of the significant indications was the wide difference in the rates at which temperature progress due to heat penetration took place in cylinders from different kinds of burned clay. The tests gave strong evidence of the superior insulating value of porous burned clay over that which is denser. The heat-insulating properties of burned clay with a porosity of from 31 to 37 per cent. were indicated to be about the same, under fire-test conditions, as that of some kinds of concrete.

Comparison as to the heat-insulating properties of different kinds of concrete were favorable to slag concrete and limestone concrete. Limestone concrete showed superiority in point of strength after undergoing the fire test. This was surprising in view of the fact that limestone had been regarded as unsuitable for use as an aggregate in concrete in fire-resistive construction. Fire tests of full-size reinforced concrete colums have since confirmed the results of the tests of these smaller specimens in regard to the limestone, showing that it is an excellent aggregate for fire-resistive concrete.

Wm. A. Luchtenberg, Zanesville, Ohio.

Interesting results were obtained from tests of gypsum cylinders. The heat-insulating properties of this material were known to be good, and the records made were consistent with information already existing. The heat-insulating properties of lime mortar were shown to be good. Both lime mortar and gypsum specimens were very weak after fire test.

The largest and most important piece of work in which this section of the Bureau of Standards has been engaged is the fire testing of a large number of full-size building columns that has been done jointly by Underwriters' Laboratories, the Associated Factory Mutual Fire Insurance Companies and the Bureau of Standards. This investigation,which has been carried on at Underwriters' Laboratories at Chicago by representatives of the three participants, has covered a period of approximately five years and is an exceedingly comprehensive piece of work. The most important types of steel building columns, a number of types of concrete columns and even of wood columns have been subjected, under the most carefully controlled conditions, to the standard fire test, governed by conformance to the standard time-temperature curve that has been adopted in this country to be followed in such tests.[5] All observations that could be of value in the study of the behavior of columns, under load, when subjected to fire, have been taken. The equipment for this work has of necessity been elaborate and expensive. The design, installation and perfection of the deformeter alone, the apparatus for measuring the deformations which took place in a measured portion of each column, while in the furnace under fire, constituted an important investigation in itself, and this represents but a small part of the physical equipment required for such a piece of work.

The investigation proper began with the testing of steel and cast-iron columns with no protection whatever. These tests were extremely short in all cases as would be expected. They afforded valuable engineering information and will serve as an object lesson on the necessity of protecting steel columns and other members in buildings, against heat. Following this part of the work, steel columns of several types, protected by different types of coverings that are in use for the protection of columns in building of fire-resistive construction, were tested. The protective coverings included several forms of concrete protection made from concretes containing different types of aggregates; a number of forms of protection produced by the use of plaster on metal lath; the important types of gypsum block protection, the important types of clay hollow-tile protection and protective coverings built of brick. Separate tests were made of the properties of the materials used in the building of the columns, protected and unprotected, and the work involved in these tests alone was no small matter.

This investigation has been completed and a thorough and comprehensive report has been prepared which is now in process of publication. It would be inexpedient to make fragmentary statements regarding these results before the whole structure of evidence, interpretations and conclusions is available for study. It is sufficient to say that these results will show the need that has existed for just such an investigation which would not, in all probability, have been carried out at all except by laboratories representing and supported by national bodies.

In order that as large a part of the field as possible should be covered at the same time, the Bureau of Standards has carried out, independently, at its Pittsburgh laboratories, an extensive investigation of the fire-resistive properties of different types of reinforced-concrete columns. The first progress report of this work was published in 1918 and may be found in the Proceedings of the American Concrete Institute for that year. A second progress report has been published in the Proceedings of the Institute for 1919 and a summarized report of the whole investigation has been presented for publication in the Proceedings for 1920. A comprehensive account of this work with a full presentation of the data obtained will be published as a Technologic Paper of the Bureau of Standards.

It is unfortunate that it is the results of the tests of concrete columns instead of tests of steel columns that are available for presentation in this paper. The record made by different types of hollow tile and brick protection would be of special interest, especially when compared with the performance of other kinds of protective materials; however, the importance of definite engineering data which will aid in effecting economies in concrete construction, especially in the skeleton construction type, without sacrificing safety to cost is of such evident importance that such data must also be of interest.

A number of the members of the N. B. M. A. have seen the gas-fired furnace which has been used at the Pittsburgh laboratories for the testing of the full-size reinforced-concrete columns. It is provided with a suitably supported oil-driven jack operated by a hand test pump. The capacity of the jack is 500 tons. The rated capacity of the steel structure holding the jack is 300 tons. Most of the columns tested have been 18 in. in diameter; some have been larger and a few smaller. All columns were 8 feet, 9 inches long. Columns were made in the laboratory. Thermocouple wires were placed in the forms before casting concrete and were so held by suitable devices as to insure that they would be so located, in the completed column, that temperatures could be obtained, during the progress of the fire test, from definite points in the steel and in the interior concrete. The wires for measuring the temperature of the steel reinforcing rods were attached to the rods by inserting their ends in small holes drilled in the rods and peening them in.

When the column was in place, ready for test, pressure was applied by means of the jack until the gage indicated that the load on the column was equal to the rated safe working load for that column; then the fire test was started. In the course of the fire test, as the column expanded, with a tendency to increase the load, a little oil was let out of the jack by cracking a valve at the test pump so as to prevent the load from increasing. In case the load indicated by the gage showed a decrease, due to leakage of oil or to compression of the column, it was brought up to the original point by pumping. Temperatures were measured, in the furnace, and in the interior of the column by means of iron-constantan thermocouples and a Leeds and Northrup potentiometer indicator. The firing was governed so as to conform, as nearly as possible, to the standard time-temperature curve for fire tests, previously referred to. A fire test in which the rate of heating corresponds to the standard curve for fire tests is supposed to represent the conditions of an extremely severe fire. The rate of heating is extremely rapid and a test of this sort may be expected to develop spalling in most test specimens which have a tendency to spall.

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[5] Proc., A. S. T. M., 1917, Report of Committee on Fireproofing, p. 296.

In the fire tests of concrete columns spalling was shown by some kinds of concrete and no spalling whatever by other kinds. The tendency to spall was found to depend on the kind of coarse aggregate used in the concrete. Concrete made from gravel with a high content of either quartz or granite had a tendency to spall; concrete made from a gravel containing about 90 per cent. of limestone pebbles and of course but little quartz or granite did not spall at all. Concrete made from crushed limestone, blast-furnace slag or trap rock did not spall at all in any instance. Extremely good records were made by all types of columns made from concrete in the non-spalling class.

It was the practice, in making these tests, to increase the load on the column, while it was hot, at the end of a fire test lasting for four hours, to test the strength of the column when in its weakest condition. There were a few columns made from gravels high in quartz or in granite content which failed under their working load before the fire test had gone the four hours; compared with concrete columns made from non-spalling types of concrete such records are obviously poor; judgment should be withheld, however, as to how these records compare with those made by steel columns with various types of protection until the results of the tests of protected steel columns are published. None of the columns made from the non-spalling aggregate lost much more than fifty per cent. of their strength in the fire test; many of them lost less than fifty per cent. The fact should be emphasized that this is based on a comparison between columns tested hot, at the end of four hours of fire test, and similar columns tested cold, without having been subjected to fire test.

Of all the aggregates from which columns were made, the crushed limestone and the gravel containing a large percentage of limestone pebbles made the best records. This is contrary to the former general belief that limestone aggregate was unsuitable for concrete for fire-resistive construction, but the results are so consistent as to remove all reasonable doubt that limestone constitutes an excellent aggregate for such use.

It has been a matter of common observation that concrete, in common with a number of other building materials, sometimes spalls when exposed to fire. As long ago as 1905, attention was called by Prof. Ira H. Woolson, then of Columbia University, to extremely poor and even alarming results which he had obtained in the course of a study of the fire-resistive properties of concrete, from specimens in which the aggregate was a pure quartz gravel that was being used as an aggregate for concrete in the vicinity of New York City (6). He attributed the extremely poor results shown by this particular kind of concrete to peculiarities in the expansion of quartz. Several years later other peculiar features in the expansion behavior of quartz, especially at high temperatures, were discovered (7) and it was also learned that the behavior of granites was very similar in this respect to that of quartz. The facts that are now known as to the physical properties of these two minerals seem to account for the spalling of concrete that sometimes occurs. It may now be said, not that any kind of concrete is likely to spall under certain conditions, but that certain kinds of concrete are likely to spall under certain conditions.

Having found that columns made from certain types of gravels consistently gave poorer results than columns made from other aggregates, several methods for economically building better fire resistive columns with concrete made from these aggregates were tried. These methods included, among other things, the plastering of such columns, the use of plaster to take the place of a large part of the concrete that is provided, over the steel, to protect it from heat, and the use of light reinforcement such as a light grade of expanded metal in the protective concrete to prevent its being displaced in case of spalling. A statement of the results obtained with these methods may be found in the summarized report presented to the American Concrete Institute. It is sufficient for the purpose of this paper to say that it has been demonstrated to be practical to produce without excessive cost reinforced concrete columns made from concrete in which teh high-quartz and high-granite gravels are used, which can be depended on to resist extremely severe fires.

It may be said that the results of this investigation have removed the most important uncertainties in regard to the fire resistive properties of reinforced concrete in skeleton structures and particularly in columns.

It has been shown that satisfactory reliability in respect to the behavior of concrete columns under fire can be obtained in many localities by the selection of one of the more favorable aggregates and that in localities in which only aggregates high in quartz or granite are to be had at reasonable cost, such an aggregate can be used and the column made safe against fire if one of a number of methods, involving comparatively little additional expense, is employed.

The Bureau of Standards now has under way an investigation of the strength of steel at high temperatures and another on the fire resistive properties of wall plaster and of partition constructions in which different kinds of plaster are to be compared. Special equipment for the fire testing of large sections of partitions and walls has been provided. It was necessary that the furnace should be large enough to accommodate a test sample of partition or wall which would develop the same tendencies, under fire, as a similar partition or wall would develop, under fire, in a building. The furnace that has been built for this purpose by the Bureau of Standards will take a test specimen 12 feet high and 16 feet long. Provision has been made for transferring test specimens to and from the furnace by means of a crane. An overhead track, with I-beam travelers, permits the partition or wall specimen to be moved to a suitable position for the application of a hose stream after exposure to fire. Heavy steel frames, made from twenty-inch I-beams, have been built to provide suitable restriction for specimens made from such materials as brick, hollow tile and concrete, in order that the effect of expansion in causing buckling and spalling and possibly even the collapse of the specimen may be developed. This equipment will be especially serviceable in securing information bearing on the question of the suitability of different thicknesses of different kinds of brick, hollow tile and concrete for important partitions and for fire walls. It may appear, at first thought, that we know all we need to know about the fire resistance of the old reliable brick wall; the fact remains that there are some important questions yet to be answered about what a brick wall of a given thickness will do under fire in certain places. In the case of hollow tile, the need for information is comparatively urgent. The record of hollow tile in actual fires has been neither consistently good nor consistently bad. As a result the opinion of competent, disinterested authorities on fire resistive construction appears to be generally unfavorable to the use of hollow tile in important fire walls and fire partitions. Hollow tile is made in a variety of designs from clays and shales differing widely in physical properties. Fire tests may take the mystery out of the fire resistance of hollow tile, as they have done in the case of concrete. It would not be surprising if a comprehensive investigation were to bring out the fact that the reputation of all hollow tile has been affected by the behavior of the tile made from some one class of raw material and perhaps also that certain details of design may have a bearing on the behavior of the tile under fire. Considerable information bearing on the fire resistance of brick and particularly of hollow tile, will be supplied by the report of the column tests, previously referred to, that have been made at Chicago, and the Bureau of Standards

E. J. Kane, Kushequa, Pa.

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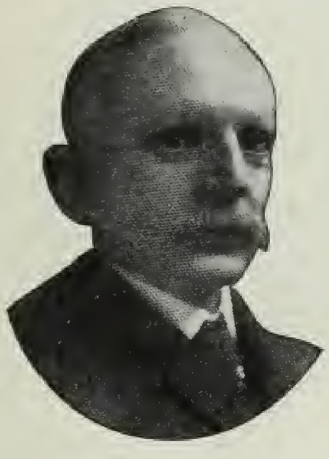
(6) "Investigation of the Thermal Conductivity of Concrete and the Effect of Heat upon its Strength and Elastic Properties," by Prof. Ira H. Woolson, A. S. T. M., 5, 1905, and 6, 1906.

(7) "The Determination of Mineral and Rock Densities at High Temperatures," by Day, Sosman and Hostetter, Am. Jour. Sci., 37, p. 1, 1914

hopes to be able to take up further investigations dealing with the fire resistance of brick and of hollow tile within the near future. (Applause.)

General Discussion.

President Hammond: Following the line of thought of this paper, the Chair wishes to give an illustration of carelessness in the city of Beacon on the Hudson River. A block of three story buildings heavily mortgaged by the man who owned it. He used all the entire lower floors as a garage, and the garage was largely stocked with a great many cars. A young man was set to vulcanizing tires. The floor was part concrete and part wood, and the wooden part of the floor was stored with a lot of containers of gasoline cans. The gasoline tanks of the cars were filled on the concrete floor and in carrying the gasoline over from the place it was stored to the cars it was spilled along on the wooden floor, where this young man was vulcanizing. The telephone bell rang and his foot got in the way of the little torch or light with which he was vulcanizing and it fell in the gasoline and instantly there was an explosion. The boy was cut off from escape. He was rescued later, but to tell his story, the explosion shattered everything, the buildings were consumed to the last vestige of anything except the brick work and foundation. The mortgage was foreclosed and the old man died a victim of his own carelessness.



Ex-President William Conway, Philadelphia, Pa.

Secretary Randall: I think it would be a good plan this next year to make Mr. Hull chairman of the Committee on Fire Prevention. I also want to suggest that Mr. Hull and other government employes of the Bureau of Standards who give of their time and talents to further the interests of our Association and the clay industries be made Associate Members of this Association, so long as they continue in active service along these lines. I would like to have every one of these college men who are working with us and for us, giving of their talents and brains for the advancements of our organization, and that will include some half dozen men like Mr. Hull. In fact, I move we make Mr. Hull, and other educators like him Associate Members of the N. B. M. A.

Wm. Conway: I second the motion.

Carried.

President Hammond: Secretary Randall will announce the regular order of business.

Secretary Randall: We were to have a paper by one of our staunch Canadian friends, Mr. Wm. Burgess, of Toronto, who is now president of the Canadian Association. He has been a regular attendant at our conventions for a number of years, as has Mr. Gordon Keith, secretary of the Canadian convention. The latter is here with us, though not in the room at this moment. He may have Mr. Burgess' paper with him. If so, we can have that a little later in the day. I have a letter from Mr. Burgess, regretting his inability to be present.

Kept at Home by the Flu.

Toronto, Canada, February 17, 1920.

Dear Mr. Randall:

I am very much disappointed to have to advise you that I will not be able to attend the N. B. M. A. Convention this year. Yesterday was my first day out intwo weeks, having had the la grippe. Now my wife has the same very bad. I had my paper well under way when I was taken ill, but I do not think it would be very much use to you unless I could read and explain it myself. We will have to try again next year. Enclosed find $7.00 to cover my membership in the Association and $2.00 for The Clay-Worker. Trusting your convention will be a success in every respect, I remain,

Yours truly,

WILLIAM BURGESS.

President Hammond: We will take up the next in order of business and hear Mr. Douglas Stevens, of Danville, Ill. The secretary advises me that Mr. Stevens is a Hoosier brickmaker, his plant being at Cayuga, Ind. Mr. Stevens fell and broke his ankle about a month ago. He discarded crutches a few days since, and with the assistance of a cane and his good wife was able to come to Columbus. It takes more than a broken ankle to keep a real Hoosier brickmaker away from our conventions. I am glad to introduce Mr. Stevens. (Applause.)

WAGE SYSTEMS.

DOUGLAS F. STEVENS, M. E., DANVILLE, ILL.

Mr. President and Gentlemen:

The greatest results of the world war in industry has been a tremendous increase in remuneration of all employes. Manufacturers of brick and other clay products have experienced these changes as keenly as any other line of manufacture, though fortunately, to a somewhat less amount. In our own case our labor costs have increased about 72 per cent during the last five years and possibly this is a fair average of the experience of most brick manufacturers.

The enormous increase of labor costs must cause every brick maker to carefully consider whether he is paying his labor in the best and most efficient manner. In general, any system of wage payment should have the following three objects; first, to compensate the worker for his time and effort; second, to give the employer a definite control of labor costs; third, to provide an incentive for greater and more efficient effort on the part of the worker, which will result in larger output of the commodity on whose production the worker is engaged.

The oldest system of wage payment is the straight day or hour. This rewards the worker, merely for his time. It does not take into account relative effort on his part, gives the employer very slight control of his costs, and provides absolutely no incentive to the worker for greater output; in fact, it is often the most insidious enemy of production, as it encourages delaying a task in order to put in more time in its accomplishment.

The next oldest system is the task basis, in which a definite amount of work is required for a day's pay. This gives the employer absolute control of his costs and gives the worker uniform returns but furnishes no inducement for greater effort for increased production.

To correct the defects of the day and task system of wage payment the piece work system was devised. This gives the employer just as exact control of his costs as the task system, and gives the worker just as uniform renumeration, but it provides a tremendous incentive for greater effort on his part, as the more he accomplishes, the more he receives.

The principal advantage to this system is that, in the worker's zeal for increased production he may sacrifice the quality of his work. This disadvantage may be overcome by proper supervision and inspection.

A word of caution in connection with establishing a piece-work system. Great care should be used in determining every piece rate to make sure that it is not too high. Once a piece rate has been established, never under any conditions reduce it, for if your workers find that increased effort on their part leads to large earnings and then to a reduction of the piece rate, the entire effectiveness of your piece-work system to accelerate production is permanently lost.

There are some processes in manufacturing in which the amount of production is not dependent entirely upon its worker's efforts, consequently, piece work system would not be fair. For these conditions a bonus system of some kind is better adapted. A bonus may be added to a day rate for every unit of production above a fixed amount, or a bonus consisting of an increased piece work rate can be given in connection with a piece work scale, for all units of output. There is still another form of bonus which has been worked out in some industries, in which whatever the basic wage system used, an additional compensation is given for production above a certain fixed standard of efficiency. With any of these bonus systems the worker is given a great incentive for additional effort toward greater production, while at the same time he is insured a guaranteed minimum return for his time, but the employer does not have as exact control of his costs as under a straight piece work system.

In our own case, we have found that a piece work system is best for our shale pit, setting, drawing and rehandling. In our machine room we use a day rate with a bonus. Our stripping gang is the only place in which a day rate is used, and there no method of measuring production is possible.

Every manufacturer should study carefully his own conditions to make sure that he is using the wage system best adapted to his needs, for a change in system will often bring more effective results than a large increase in wages paid. (Applause.)

General Discussion.

Secretary Randall: There has been talk in some quarters that the machinery men dominate in the affairs of this Association. That is not true; they are a valuable asset to our organization. That is the difference between our organization and the others. The National Association has to deal with the operative end of the clay work and certainly there is no more important adjunct in that line of work than the men who are furnishing the machinery and the equipment which is needed. We must have up-to-date equipment; we must have every means of meeting the demands on the trade, so I can say without fear of contradiction that any man who knows the aims and purposes of this organization would say that the manufacturers of machinery and equipment are not only welcome but absolutely necessary in the work of this association, and if that thought is ever put up to you, I hope you will sit down on it promptly. There is no single element in the make-up of our organization that is more essential than the machinery men and the manufacturers of factory supplies. Now we can take up the matter of discussing the paper, which, in my opinion, is one of the best we have had before this or any other convention. Mr. J. Fred Smith, of Omaha, Neb., will lead in the discussion.

President Hammond: Before Mr. Smith rises to speak, I want to take note again of the students of the Ohio State University and tell them how glad we are to see them. Young men, "There is a time in the affairs of men which, taken at its tide, lead into fortune." One thing at a time and that well down, is the thing which the successful manufacturers must remember in the development of his business. I will now call on Mr. Smith.

The Wage Question.

J. Fred Smith, Omaha, Neb.: The thing which has impressed me is the increase in wage which has occurred in the larger centers. It has increased more than in the smaller centers. In our state the smaller centers have not increased anything like the larger ones. In my city of Omaha, the wage increase has been from 100 to 150 per cent. We met that by raising the price of brick every time we had to raise our men. I did not propose to keep the brick down to one price with everything else going up. Another thing we have taken a stand on. Every time the bricklayers raise, the men on the brickyard get the same increase. I don't think the men on the brickyard should be kept down and the bricklayer get the best of it all the time, so we concluded we would raise the wages of our men as the bricklayer is raised. If it gets too high we will have to stop making brick. Another thing is the task work. There is not much difference between task work and piece work. Our work is done by the thousands where we can do it. Some places we cannot, such as in the burning. One way to do the setting is by job work or get some good man, a leader in that line, and then let the contract to set the brick. We find it is cheaper than we can do it ourselves. They set more brick and make a good deal better wage than we could hire them for.

Mr. Eisenhart: I am persuaded to believe that Mr. Stevens has given this serious consideration, and has left little or nothing further to say except what to do and what not to do. I am sure brickmakers, during the past five years, have had to do a great deal of thinking along that line. Mr. Stevens has covered everything so well there is hardly anything to suggest. I want to ask him if he has ever considered the sharing of profits plan? He has clearly brought out all these different methods, but I would like to know what he thinks about the matter of sharing profits.

Mr. Stevens: I have been working on that very idea for the past year, but I have not yet reached any positive conclusion. There are possibly more different methods of profit-sharing than there are systems of wage payments, and practically every one of these methods has met with great success in some industry and yet some individual plant in that industry have made just as disastrous a failure, so it is an enormous problem. I am just as anxious to get information on that subject as Mr. Eisenhart. I hope if anyone here has had either a profitable or a disastrous experience in that connection, they will tell us. We must come to incorporate in our business a direct participation of the employes in the profits, and also a more or less direct participation on their part in the management. These two things are not necessarily tied up together, but I think they profitably could be. If Mr. Eisenhart can give us any information I would be mighty glad to hear it.

Mr. Eisenhart: I am convinced that the time has come when the man who does the work has got to be recognized. I believe he has just as good a right to share in the profits of the business as I have and whenever the profits in my business are such that I feel I am underpaid, I am going to quit, and I believe that is why a great many of our men are quitting and seeking work elsewhere. I think the time has come when we must consider that question in our work.

Douglas F. Stevens, Danville, Ill.

President Hammond: Mr. Chambers, did you want to speak on this question?

J. H. Chambers: I am interested in this above all subjects. I confess I cannot see any way by which the manufacturers can give any share of the profits for the reason that there has not been any solution of the share of the losses when the losses occur. In any discussion I have heard it has always been assumed that there are always profits to be distributed, and that is not the case. It is all right when you distribute the profits, then when you don't have any to distribute the class of men who are working for wages and have received these things are disappointed when they don't get it. They set their scale of living on the assumption that because they have made profits one year they will receive it the next. I do not look for very much success on the profit sharing proposition because of that phase of business. There are so many factors that enter in the profits which the workman does not consider, no matter how honest they may be, in many things which the wage earner cannot control, but which do effect the profits. It may be one's inefficiency, or bad debts, or any one of a hundred things which the men on the outside cannot influence one way or the other. I think everyone in every plant or machine shop will have to apply these things to suit local conditions and study and work them out individually. I firmly believe in the plan of compensating efficiency, but underlying the application of any of these systems, whether it is called the bonus or contract plan, or task work or piece work, lies the principle whether the employer means to be fair to the workman. I do not mean we are going to pad something and color it up, but really, down in the bottom of your heart, are you going to deal fairly with the man who makes the goods. If you are going to do that it will go a long way toward helping in the application. In our own line we have tried to use some of these systems and I quite agree with Mr. Stevens' remark, that having once set the rate, you ought not disturb that rate or lessen it. There is only one ground on which it can be done, and we have used it in our business and the men generally have recognized the fairness, that is, the employer provides at his own expense better appliances, improved facilities, whereby the workmen can increase the produce, not so much by his own increased labor, but by the means which you have provided, and any fair-minded workman will recognize that as a reason for adjustment of rate. Just remember what you are paying by this method; whatever it may be is not the whole saving, but simply a share in the economy. Remember, you get a portion of it as well as the men. Be generous in the portion you give him of this saving. There is nothing at all in the relation between employer and employe that will react better than a generous treatment on the part of the employer.

Gordon C. Keith, Toronto, Ont., Can.

W. A. Eudaly: I have not been here for a long time, and I think I may say something. Do you realize that the manufacture of clay wares is one of the most hazardous businesses to be found. Now I don't mean hazardous as applied to a man's life and limb. I mean hazardous as to the thing you are producing or making. You never know exactly what you have until you have it out of the kiln, and you don't know then until you get it in the shed. There is the hazard that cannot be calculated or known. Labor hesitates to go into anything that has a hazard about it. Men don't like to work where their pay depends upon a hazard and uncertainty, and therefore we have never been able to see in the manufacture of clay goods a satisfactory plan which can be worked out on the profit sharing idea. You cannot do it. The man who manufactures brick or any kind of clay ware is taking a hazard; he hardly has two clays alike, no two kilns which burn alike.

Another element I would like to speak of. I hardly know how to say it, so as not to be misunderstood. It is this: Lack of knowledge on the part of your men, lack of a comprehensive knowledge of the work you are doing, what it really ought to cost to do it, and all those things. They don't go into that thing at all. A large number of your laborers are not capable of doing it, and therefore they cannot go into the question of profit sharing intelligently. They have to trust you, as Mr. Chambers has said, to deal fairly with them, if they are to get a fair per cent. They don't know how to calculate it, and they work on an uncertainty. Therefore, you cannot establish a scale week by week. If you do it once a year you will be doing well. A great many of your men do not stay with you a year, and therefore do not care about profit sharing. Take Proctor & Gamble, of Cincinnati, manufacturers of soap. There is very little hazard about the goods coming out day by day, and they have been very successful in their profit sharing business. They have carried it on for years and are cited everywhere all over the world as being a great success. But it is very different from the manufacture of clay goods.

Another element I would like to speak of as applied to the various phases of carrying on the work of a brick plant. That is leadership. Those boys sitting back there all understand. Among that bunch of boys from the university there is a leader, I don't know which one it is, but every bunch of boys has a leader. Be it large or small, you find a leader. You find your leader in the clay bank, one who knows all the while about what is going on. You will find your leader in the machine room and about the kilns. That is really the guide to the success in the manufacture of brick. It is leadership in the several different places. Just how to get hold of the leader with a proper rate for the laborer and manufacturer is a problem, and always was with me. (Applause.)

J. O. Trautwein, Chicago: There is matter which Mr. Chambers referred to as the distribution or proportioning of losses in connection with profit sharing which a firm in the east has settled. Years before they attempted to really adopt the profit sharing, they were setting aside a fund which increases from year to year, which will take care of any possible losses which may accrue from time to time. They can in that way take care of any losses which may accrue in the business. They are trying that now and look for good results. In regard to labor, we find an element in it which we call labor turn over, which has an unusually large bearing on the effect of labor and the cost of production, and in making a study of it we found it seemed to be an element of feeling between employer and employe which was not present some years ago. The manufacture in his zeal to get production and increase in quality of his ware, had lost some of that feeling which existed between employer and employe, and we found if we wanted to succeed we must put back that feeling which existed when every employer called his men by their first names and had some interest in their individual welfare. Not to the point which might be called chuminess, but that feeling which, when a man came to work, there was something for him besides the time clock. When that time came we found there was a wonderful improvement in results. We found a feeling of the men for the employer a wonderful help in the work.

Will P. Blair: I really did not intend to say anything on this subject. I do not know that I can throw any light upon it. I suppose compensation for the laborer is the great thing which is being discussed and talked about by everybody in this country. I want to suggest one or two fundamental ideas which prevail. I have sometimes thought that everything is not taken into account. I do not believe myself in profit sharing at all. I do not believe that it will ever be made to work successfully in any way or manner. In part because of the reasons set forth by Mr. Chambers, but more particularly because it takes a fundamental idea of economy that we can scarcely get away from. If Mr. Eisenhart or Mr. Smith sets up some schedule of profit sharing that they can make work successfully in their own institutions, whatever they may term it, after they pay over and above a fair and just wage, please take into account the words "fair and just," then the public makes a contribution. I think you will all agree with me that the biggest combine we have in our mind is directed toward a condition in this country where an unjust compensation is being paid by the public this minute. Now, just one more thought to be considered in connection with this problem and this is the condition of compensation that is paid to the largest laboring element in the United States and is paid upon a basis of production, and that is the farmers of this country. The farmer does not get one cent beyond that which is measured by his labor, be it much or little, and there is the proper measure, if we can ever get the people to see it. It is measured according to his production, and that is what is sustaining this country this minute. And these are the laborers who are exploiting your condition and I believe if we get at the fundamental thing, it is justice with co-operation with the idea of actual production. The laboring man is in business for himself. He should be justly compensated, he should be paid a fair profit, he should be fairly treated, he should be justly treated, but we must not forget that we all contribute to the great general welfare of everybody in this country. (Applause.)

Mr. Cahoon: I am very much interested in this discussion, and I can only tell you a little of my experience in my part of the country. The profit sharing idea is absolutely out of the question. It would bring a great deal of dissatisfaction to employes. I know, and now to illustrate. When we first organized our company, for four or five years we tried to look after the men's interest as closely as we could, and still every year we had to go down into our pockets to pay the difference between what the material sold for and the amount we really had to pay for it, taking into consideration all the depreciation. At that time I was pretty heavily interested and had been contributing awhile and was getting tired of it. I finally decided I would go down and take charge of the works to find out what the condition was. I started out the first thing in the morning, getting down at the plant at 6:30 or something about that time, and would go around and see how things were. I used to stay in the evening until everyone had gone. I frequently came onto the boys when they were talking and heard them discuss the immense profits we had been making. I don't believe you can ever run a profit sharing arrangement and satisfy your employes. I think that is the wrong idea. I have thought a great deal about what was the best thing to do, and have tried out a lot of things. If you can get your employes interested so they would save as much money with you as at any other place, it will help. We had a number of men who had been with us 18 or 20 years, and I have adopted a little plan of my own and talked it over, and we realized this, that if we could get the men to save their money and have something at the end of the year, they will be more satisfied, and what I want to do is to improve the conditions and keep them satisfied. One thing we did was to put in a bath room, so when our men got through their work they could go there and clean themselves up and every man could go home to his family as clean as from any other business. We adopted a little plan to offer a little prize to the man who could raise the best vegetable garden. We gave him a little plot of land for the use of his family and that scheme worked pretty well for two or three years. I insisted this work must be done without interfering with the work on the plant. I think it helped them to realize how they could save money by producing something in their little garden. I think if we could set up something of that kind that would help them and save their money and get ahead, it will help, but I think we had better keep away from profit sharing. (Applause.)

Mr. Eisenhart: I am getting what I started out to get. I wanted information as to what other brickmakers are doing in this line. I want to say Mr. Cahoon is on the right track, and if he continues he will be sharing his profits with his men, I don't care whether it is bath rooms and garden plots, or something else, if the men can see you are taking an interest in them and their work. We all have our different methods of doing something. I have in my employ a man who came to me twenty-two years ago, and I have given that fellow $1,000 at the end of the year. He made it for me and I could afford to do it. I have other men that have been with me twenty odd years. I had one man who had worked for me thirty years, but unfortunately he got the "flu" and died a year ago. But all these men share with me in the profit—not any laid out plan, but they realize and know they are sharing in the profits. They do not ask me, "How much am I going to get next year?" They don't know and I don't know, but I contend that in any well regulated business at the end of the year, the proprietor knows where he stands and knows what he can do for his men. I contend that the man who takes care of things and helps make the money is entitled to share in the profits, no matter how you do it; if you take an interest in his welfare and an interest in his family, it makes him share in the profits. (Applause.)

Douglas F. Stevens: In regard to the point raised by Mr. Blair. There is no question but that Mr. Blair's position is right. The participation of the worker in any profit sharing is part of their compensation and as such is a part of the cost of production, and therefore has got to be paid by the consumer of the product produced. Industrial conditions are such that the average workman is not satisfied if he thinks he is receiving simply a wage; he has got to feel he is a member of the firm, where he is directlyinterested in the success of the business and is sharing in the success. As Mr. Cahoon mentioned, most of the employes are laboring under the delusion that we are making enormous profits. Some point of contact has got to be established so the men will know how much we are making, or are not making, but I do not think it will ever be successful to have the employes share the losses. In regard to the labor turn-over, it is only fair in the profit sharing system to take into account the length of time the employe has been with the concern. That is absolutely essential. Now as to the different methods. Two notable examples, the United States Steel Company and the Dupont Powder Company, actually give their men stock in the company, and I believe there are many small concerns that do the same thing. In the case of the Dupont Company, they give each employe one-sixtieth share of stock each month. In that way, if a man stays five years he is given one share of stock, and, of course, the longer an employe stays, the more stock he is given. But they go further; they provide an opportunity for their men to buy stock in addition to the stock which the company gives him. It is handled a little differently in other concerns. The Ford Motor Company issues certificates of investment on which they will pay a proportion of the earnings of the company, which is another plan that can be considered.

Mr. Blair: Will you permit a question? Who pays for the profits on that stock?

J. P. Cahoon, Salt Like City, Utah.

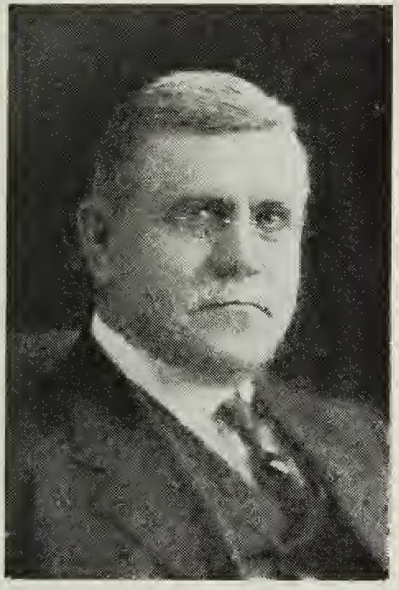
Mr. Stevens: The ultimate consumer. There is no question about that. Mr. Blair.

Mr. Blair: Then it is a question of boosting the price of brick, and the people pay for it.

Mr. Stevens: I said a moment ago that Mr. Blair was absolutely right economically, but their industrial condition in this country is such that if you do not get your men to feeling that they are sharing in the profits of the business, you will not have any men. It is a case of taking things not as they should be, but as they are. (Applause.)

President Hammond: Are there any other gentlemen who wish to speak on this subject. Mr. Jay Terry, from Kingston, N. Y., is here, and we will be glad if he will speak on the North River system of hiring workmen and paying them.

Jay Terry, Kingston, N. Y.: I do not know that anything I can say will furnish information for these gentlemen. On the Hudson river most of the work is done by task or piece work. During the last year or two when things have been unfavorable in our line, we have been doing things that have not been done before in our line of business. I think Mr. Stevens is working along the right line, and we have been considering the thing at some length, but we have not put it into practice. We have about decided that one of the ways to make the employment attractive and satisfactory is by a bonus for working steady. In other words, if we are paying, say once in two weeks, if a man makes full time, allow him an extra day for a certain amount. Besides that, at the end of a year, or after a term of years of employment, a certain percentage of the money he has earned in any one year or the times during which he has been employed is paid him.



Ex-President Will P. Blair, Cleveland, Ohio.

President Hammond: If there is no further discussion I will ask Secretary to announce the next in order.

Secretary Randall: This discussion has been very interesting, and I am glad it was a Hoosier brick man who injected it into our proceedings. If it is your pleasure I will read some letters and telegrams I have from absent members. The first is a telegram from our new First Vice-President:

Acknowledgment from Vice-President Dunwody.

"Please extend my sincere thanks to members of the National Brick Manufacturers' Association for putting me in the responsible position of first vice-president of our Association. I am appreciating the confidence implied more than I can express. With best wishes for you and all the officers and members, and with promise of my closest attention to any matters of interest to our association which may come before me, I am sincerely, W. E. DUNWODY."

We also have a telegram from the President of the Chamber of Commerce of Springfield, Mass., which reads:

"We want you in 1920. Let us welcome you to our city."

There is a wire from Mr. Ryttenberg of Sumter, S. C., one of the live men of the south, who was to have presented a paper. His telegram is rather shocking:

"Partner in bed with trained nurse. Wife and I sick at home. Isn't that tough? Sorry can't be with you, because I have a bunch of jokes for Sibley, and a gallon of moonshine for you. Jokes will keep, but other won't. Tell friends not to be gloomy because out of spirits. Better luck next time."

"RYTT."

President Hammond: I want to speak of one to whom we are greatly indebted, and that is the architect, D. Knickerbacker Boyd of Philadelphia, a man who has given the highest intellectual talent to his profession. He is devoting his time and his labor toward the advancement of the business in which we are engaged, and I ask you to consider with great thought and kindness the name of D. Knickerbacker Boyd, and whenever you meet him know you are meeting a friend.

Report of Committee on Resolutions.

Will P. Blair: Mr. President—We, your committee to whom was referred the duty of formulating the sense and expressing the judgment of the National Brick Manufacturers' Association upon matters and things which are of concern to them, beg to submit for your approval and adoption the following resolutions:

Whereas, By reason of the fact that our manufactured products bear exceptional merit in contributing through the varied uses of the same against destruction and loss by fire, therefore be it

Resolved, That we urge upon our membership the duty of promoting by example within our industrial plants of safeguards for life and property from loss by fire, employing every facility for the highest degree of safety against injury and destruction by fire.

Mr. Blair: I move the adoption of this resolution.

Douglas Stevens: I second the motion.

Carried.

Mr. Blair: The next is a resolution relative to our patriotic duty.

Whereas, we believe it the patriotic duty of every individual to practice economy, encourage thrift and to employ his every effort in his respective avocation and employment to the limit of physical ability that we may replace want with plenty, and thus make practical the only avenue of reducing the high cost of every living requirement of which we now complain; be it

Resolved, That we demand that idleness in this country be made odious.

Mr. Blair: I move the adoption of this resolution.

Jay Terry, Kingston, N. Y.: I second the motion.

Carried.

Mr. Blair: The next relates to a matter of great importance to the industrial welfare of the country.

Whereas, Industrial demand for greater transportation efficiency has now increased to such magnitude that even with the restoration of the greatest efficiency, both on the part of increased facilities of railway transportation and the rendition of loyal service on the part of the employes thereof, that the required transportation will still be inadequate for the welfare of the country. Therefore be it

Resolved, That we demand at the hands of Congress the immediate enactment of such a provision for the establishment of a Federal Highway Commission as is at present provided in the act known as the "Federal Highway Act," which has been introduced into recent Congress by Senator Townsend of Michigan.

Mr. Blair: I move the adoption of this resolution.

Mr. Eisenhart: I second the motion.

Carried.

Mr. Blair: The next resolution considered by the committee was the one read in your hearing at the first session, relative to the teaching of Americanism in our public schools.

Resolution for the Teaching of Americanism.

WHEREAS, The social and industrial unrest now spreading in our country and constituting a serious menace to our institutions is due to lack of knowledge and appreciation of the principles of civil liberty guaranteed by the constitution and exemplified by the history of the United States; and

WHEREAS, The stability of our institutions and the future welfare of our civilization requires not only the education of the present foreign born element of our population, but also the careful education of the coming generation of citizens; and

WHEREAS, We recognize in the common and public schools throughout the country a far-reaching agency, already organized and waiting to be used, for the instruction of the youth of the land on this most important of all subjects, and we believe that systematic education in Americanism must not longer be omitted from our public schools or left to the casual efforts of individual localities or individual teachers, but that the lessons of applied patriotism must be adopted and seriously taught in all grades of our public schools; now, therefore, be it

RESOLVED, That the National Brick Manufacturers' Association in convention assembled, heartily approves of the establishment of properly related courses of instruction in history, economics, and civil government and that same should be adopted and required in every public school; that these branches should be given in all grades, beginning with the youngest and continuing through the high schools, and should be taught in clear and simple manner, suitably adapted to the different grades, and with the same system and regularity as other fundamental subjects are taught; that such instruction should include the following: Such incidents from American history and pages from the lives of our great men as will inspire love of country and devotion to American ideals; the long proven advantage of our American form of representative government as distinguished from a pure democracy; that domination by any class or group, or the enforcement of demands by any method other than due process of law, is destructive of all liberty; that all necessary changes in law can be obtained in due time by orderly and constitutional methods whenever the majority of our people earnestly desire them; that the right to own property is itself an attribute of liberty and an essential condition of social and political progress; that all kinds of labor, whether of hand or brain, are equally necessary, and must have equal honor and consideration; the elementary economic principle that every man shall enjoy the right to work, to own and save the just fruits of his labor, and that capital is only the accumulation of individual savings; that artificial restriction of output is an economic waste, which involves loss of opportunity to the individual worker and violates the rights of the public; that civil liberty consists of the due relation of individual rights, checks against arbitrary power, and guarantees of self-government; and all other essential principles of American constitutional government, as established by our forefathers, and under which, for nearly a cenutry and a half, the people of America have enjoyed the greatest degree of freedom known to the history of man; and further be it

RESOLVED, That we, the members of the National Brick Manufacturers' Association, urge the adoption of such instruction in the public schools of our various localities and do what we can individually to assist school officials in teaching Americanism in the grade schools of the nation.

Mr. Blair: I am glad to move the adoption of this resolution.

Charles Clippert: I second the motion.

Carried.

Mr. Blair: The next is a resolution introduced by Prof. Orton following along the lines of his magnificent address Wednesday, and was endorsed by the entire committee.

Resolution Endorsing Military Training.

Whereas, The United States has been obliged in every important war in which this nation has thus far engaged, to resort to universal military service by the draft in order to obtain the necessary forces for effective defense; and

Whereas, The reluctance to require universal military service by the draft has always resulted in prolonging our wars, delaying our success and increasing the cost in life and money to a point far greater than should have been; and

Whereas, Since young men must serve in time of war, they and their families are entitled to demand that they be given such training as will reduce their danger and avoid needless sacrifice of life; and

Whereas, Good citizenship implies recognition of the obligation of the citizen to do his share of the public work of the country, including military service and American youth cannot be expected to realize the vital nature of this obligation unless it is brought to them in a more positive manner than by precept and compulsory military training does more than any other possible method bring home to them this fundamental requirement of good citizenship; and

Whereas, Universal military training will make for better citizenship, because it will democratize the people by mingling youths of every social stratum, class and interest in one common duty; and

Whereas, Universal military training will make for better citizenship because it will necessarily educate and develop the illiterate group of the people partly by direct study of the English language but chiefly by awakening the pride and ambition of the backward, and creating in them a desire to overcome their deficiency; and

Whereas, The mobilization of our army in the last war showed a degree of physical unfitness, degeneration and disease among the ten million men examined, which cannot be otherwise than appalling to all thoughtful persons and the experience of this mobilization also proves that a large part of this unfitness and disease is curable or preventable under the conditions of compulsory military training, and that no other means has yet been found to deal with this public menace; and

Whereas, To a peace-loving people who covet no other nation's goods or lands, and who only seek the opportunity for peaceful growth and commerce, a large professional army is expensive, foreign to our social ideals, and unnecessary if the youth of the country are given a short military training; and

Whereas, The creation of a citizen army, trained so far only as will make their rapid mobilization and complete training possible in time of need, is the fairest, simplest and most democratic method of distributing the burden of national defense and is the best insurance for the preservation of peace and the upbuilding of our political ideals and the improvement of the physique of our rising generation; and

Whereas, The military plant equipment and personnel for conducting the training of the youth of the country have been obtained at untold expense during the World War and are now on hand and available, and will now be sacrificed at a negligible fraction of their cost unless retained for use in a universal military training plan; and

J. F. Reynolds, North Haven, Conn.

Whereas, The Constitution of the United States has from the first contained a universal military service requirement for the execution of which the Congress has never provided the proper means of executing, and it is now possible for the first time in our history as a nation, to adopt a rational military policy and to provide without undue expense for its execution; therefore, be it now

Resolved, By the National Brick Manufacturers' Association of the United States, in annual convention assembled, that they are in favor of the enactment at this time of a reasonable universal military service law, along the general lines of the army reorganization bill (Senate Bill 3792) now pending:

That they urge upon the members of the Congress, their united efforts to pass this much needed legislation for the betterment of our people and the preservation and upbuilding of a better citizenship, and

That they call upon all brick manufacturers and others connected with this Association, to work for this legislation in their respective communities and to cause, through proper individual and collective action by citizens the favorable consideration of this plan by their representatives in Congress

Mr. Blair: I move the adoption of this resolution.

Secretary Randall: I want to second that motion, and want to add a word. I want you to distinguish in your minds the difference between militarism and military training. By the latter we hope to educate our boys and improve them morally and physically in a very effective manner. I hope this resolution will be adopted unanimously.

Jay Terry: There seems to be no plan to get this before our representatives. I think it would be wise to amend that motion so we could get a copy of it to each member of congress and to the president. I think the secretary should furnish a copy to each member of congress as soon as he gets home.

C. P. Mayer: Might it not be well for the secretary to mail a copy of Professor Orton's paper to each member with a copy of this resolution, and suggest that the members take it up with their congressmen.

Secretary Randall: The secretary will act on that suggestion.

President Hammond: I think we can accept that. You will now vote on the motion.

Carried.

Mr. Blair: The next is a resolution in respect to our departed members.

In Memoriam.

Whereas, Since our last meeting death has entered our ranks and removed the following members: Charles M. Crook, Binghamton, N. Y.; Jas. A. Hogan, Chicago, Ill.; A. R. Root, Philadelphia, and D. F. Morey, of Ottumwa, Iowa; Fritz Wagner, and

Whereas, In their death the association has sustained a great loss; therefore, be it

Resolved, That this tribute be paid to their memory and the sincere sympathy of our entire membership be extended to the families of the deceased.

Charles H. Frank, Chairman Ladies' Reception Committee.

I move the adoption of this resolution.

Secretary Randall: I want to second that motion. Among the members whom we have lost this year was a man who, like myself, had never missed a convention since our first meeting at Cincinnati.

President Hammond: Just a moment, Mr. Randall. In memory of the dead I will ask the members of this convention to rise and remain standing during these remarks.

Secretary Randall: A. R. Root of Philadelphia was a charter member of this association and had attended every convention we had ever held. He was a faithful, intelligent and earnest advocate for the things that this association stands, and I am glad to pay this little tribute to his memory, for in his death we have lost a very faithful member.

Mr. Blair: I wish to add a word particularly with reference to the memory and work of Charles M. Crook, one of the ex-presidents of this association. I had the pleasure of acquaintanceship of all these deceased members and had a high regard and esteem for all of them, but particularly for Charles M. Crook. He was my personal friend and associate. For two years he was president of the National Paving Brick Manufacturers' Association. Loyal to the craft, ever ready to serve every need, night and day, year in and year out. Never for once losing any point of interest that might contribute to the welfare of the industry. So I feel just a word or two in respect and in commendation of the memory and services of Charles M. Crook is due from me.

President Hammond: While you are standing I will ask you to vote on this resolution.

Carried.

Mr. Blair: The next is a resolution of thanks to our hosts.

Whereas, This, our Thirty-fourth Annual Convention, has been characterized by kindly co-operation on the part of all participants, we are particularly obligated to the local Entertainment Committee, who have so carefully planned and intelligently carried out the program of entertainment which will make Columbus a pleasant memory to every delegate and visitor at this convention; therefore be it

Resolved, That the sincere thanks of the National Brick Manufacturers' Association be tendered to Colonel Orton and his associates who unitedly have made our stay in the city of Columbus very pleasant, and have enabled us to carry on the work of the Association under most favorable conditions. Be it further

Resolved, That the earnest thanks of the delegates and guests be tendered to the management of Hotel Deshler for the splendid convenience and service rendered during the Convention. Be it further

Resolved, That the thanks of this Association is due to each and all of those who have contributed papers and addresses and also to the officers of the Association who have so generously contributed of their time and talents for the benefit of the clay craft, and which all in all has made this, our thirty-fourth convention, one of the most successful and memorable in the history of the Association.

I move the adoption of this resolution.

Mr. Eisenhart: I second the motion. I have attended a great many conventions in my time, but I have never received any better treatment anywhere than I have from this hotel.

Motion carried.

Respectfully submitted by the committee.

WILL P. BLAIR, Cleveland, O., Chairman.
A. E. DAVIS, Indianapolis, Ind.
J. FRED SMITH, Omaha, Neb.
WM. HAMMERSCHMIDT, Lombard, Ill.
T. B. FREEMAN, Pittsburgh, Pa.
ROSS C. PURDY, Buffalo, N. Y.
GEO. M. NORWOOD, Goldsboro, N. C.
J. H. MILLER, Washington, D. C.

Mr. Eisenhart: Mr. President, I move the adoption of the foregoing report as a whole.

Charles Clippert: I second the motion.

Carried.

Mr. W. A. Eudaly: I am wearing a guest badge and I want to thank the convention for the privilege of wearing this badge, and was wondering some way if that could not be put in the resolutions.

Secretary Randall: I think it would be very consistent to make our ex-presidents life members of this association. This year we are losing Mr. Fiske as a regular member. I have a letter from Mr. Gregory relative to Mr. Fiske, which he wanted me to read to this convention in case he himself was not able to be with us. He says:

"My Dear Randall:

"Your letter of recent date received, in which you mention having received a letter from our good old friend Mr. Geo. M. Fiske of Boston, in which he said he was going to send a farewell letter to the convention. Mr. Fiske was one of the old standbys of the convention and has been a true and loyal member for many years, and I would like to ask the convention to make him an honorary member for life, as I believe he is entitled to this honor and just recognition for continuous services and loyalty to the association through many years. To know Mr. Fiske was to love him for his many noble qualities, and I regret that his age should prevent him from attending our meeting. As I look over the proceedings of the association I find he was one of the old standbys, and I believe his name will be recorded in memory as one of our true and loyal members, and trust the convention will see fit to honor him at this time. Believe it will be a satisfaction to him to know that, although he is not able to be with us, he is not forgotten. His name will be handed down in the annals of our association as having done his full part toward the promotion of our noble craft.

"Yours truly, M. E. GREGORY."

Ex-Presidents Made Life Members.

I move, Mr. President, that the ex-presidents of this association be made life members. That doesn't bar any man from continuing to pay his fee, but I think those who continue to take an active interest in the association until they retire because of age should be retained as life members.

Will P. Blair: That is very kind to the men who are obliged by reason of their health to refrain from attending the convention, but here is Mr. Eudaly and myself; we are still young, and I don't think we have arrived at that point where we ought to accept that kind of honors from this association.

President Hammond: Did I hear a second to this motion?

J. Fred Smith: I second the motion.

Mr. Eudaly: Outside of the question of annual fees, and dues and things of that sort, I want to say to you I have received a great many honors in my life. A few years ago six men in America were selected to represent a National Association, one of the greatest in the world, and I was one of the six; that was a great honor. I am a life member now of some of the greatest associations in the world; no need to name them to you, but I want to say that if I could be made a life member of this National Brick Manufacturers' Association I would consider it one of the greatest honors ever conferred upon me.

Mr. Eisenhart: I agree to that to the extent that I pay my dues so long as I can raise the money. (Laughter.)

Motion carried.

Mr. Eudaly: I want to say that no matter what the dues are, first I want to be elected myself, and I want to thank the convention. Mr. Randall can have my dues whenever he wants it.

President Hammond: What is the next order of business, Mr. Secretary?

Secretary Randall: We will now go back to the regular program and listen to Mr. Harrop's paper—that is, I thought that is what we would do, but I am sorry to say I forgot to wind my watch last night, most of you know I was taken ill at the banquet, and you can guess I was pretty sick when I forgot to wind my watch. The hotel management tells me they must have this room for a luncheon at 12 o'clock; that there are a couple of hundred men outside waiting now, and as it is now nearly twelve we will have to adjourn now and come back promptly at 2:30.

President Hammond: Gentlemen, we will take it by consent and stand adjourned. I will ask you to be very prompt in coming into the afternoon session.

FOURTH SESSION.

Friday, 3:00 P. M., February 20, 1920.

H. C. Kleymeyer: I move that Mr. Blair, one of the senior ex-presidents in the room, take the chair and call the meeting to order. I am sure Mr. Hammond will not object, for some of us want to take afternoon trains, and want to hear this paper of Mr. Harrop's on the tunnel kiln.

Secretary Randall: The executive committee was in session right up until half-past two, hard at work. Our president has just stopped to get a bite of lunch and will be here in a few minutes.

Seconded by several and carried.

Mr. Blair in the Chair: This is really the business of one of the vice-presidents, but as they are evidently with Mr. Hammond presume we might as well proceed with our business. The convention will come to order and I will ask Mr. Randall to announce the first on the program.

Mr. Randall: We will take up the program where we left off this morning and listen to Mr. Harrop.

THE DEVELOPMENT OF THE CONTINUOUS TUNNEL KILN

BY CARL B. HARROP, COLUMBUS, OHIO.

Mr. President and Gentlemen:

The present-day continuous tunnel kiln consists essentially of a long brick tunnel with arched crown and means for introducing heat approximately midway within its length—the temperature diminishing towards each end. With the various temperatures throughout its length held constant, the ware is charged in at one end on cars and gradually approaches the high temperature zone, after passing through which the ware gradually gives up its heat as it approaches the discharge end. (Fig. I)

We find this type of kiln or furnace used in bakeries, in the annealing treatment of sheet steel, for roasting ores in metallurgical processes and in the burning of clay wares. We are, of course, interested in this type of kiln primarily as it is applied to the firing of clay wares.

This kiln originated in Europe—the first kiln appearing at Vincennes, France, in 1751, being used for firing overglaze colors. The first kiln of this type proposed for firing brick was covered by a Danish patent in 1840. This was followed by a kiln which was described in a German publication in 1848, and which consisted of merely the heating end and the combustion compartment, but no cooling end. (Fig. II.) When the ware had passed through the high temperature zone it was removed and placed in another tunnel, or compartment, to cool. Other designs embodying various ideas of construction were then brought out, some of them not differing greatly from the modern kiln.

Carl B. Harrop, Columbus, Ohio.

In 1877 Otto Bock was granted a German patent and he built about 60 of these kilns—most of them proving failures. Within the last 15 years or so more successful kilns have been developed, particularly the kiln of the Faugeron type, and a number of these are now in successful operation in Europe.

The American history of this type of kiln seems to start with a kiln erected in Chicago about 1889 by J. C. Anderson for the firing of dry press brick. Mr. Anderson took out two patents about this time, both pertaining to the twin-tunnel type. He soon built another kiln at Long Island City, but neither kiln operated for any great length of time. In 1910 two kilns of the Faugeron type were built at Keasbey, N. J., and as these kilns are still in operation, it can probably be said that these are the first successful kilns built in this country. The muffle type of kiln was introduced to this country from England about 1915, and has been attended with considerable success, particularly in the burning of white wares. Other kilns have been brought out from time to time—some admitted failures and others with varying degrees of success.

A large number of patents have been issued in this country on tunnel kilns which have never been built. Information secured from the United States Patent Office in June, 1919, indicated that at that time there were in force 63 patents relating to the tunnel kiln and twice this number which had already expired.

One of the questions which naturally arises in connection with this kiln is the matter of advantage over other types of kilns for firing clay wares. The principal advantages seem to be as follows:

1. All cars of ware pass through the same burning conditions, i. e., they all advance through the heating end at the same rate, they remain in the high temperature zone for the same length of time and they all recede towards the discharge end through the cooling compartment at the same rate.

Result—General uniformity of firing of the ware on all trucks.

2. In this kiln the full continuous and regenerative principles of firing are involved, i. e., the products of combustion, after passing through the high temperature zone, give up most of their heat to the incoming ware before they are finally discharged into stack or exhaust fan, while the fired ware, after passing through the high temperature zone, gives up its heat to the incoming secondary air as the ware recedes toward the discharge end.

Result—Great economy of fuel—normally 65 to 75 per cent. over periodic kiln operation.

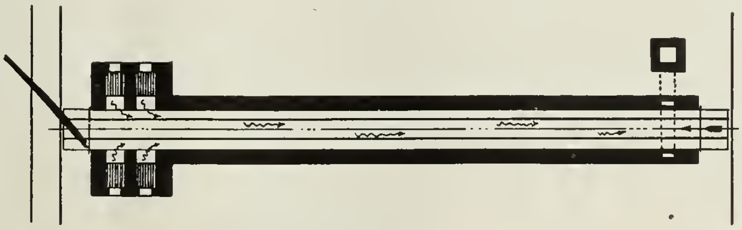


Figure 1 (Upper).

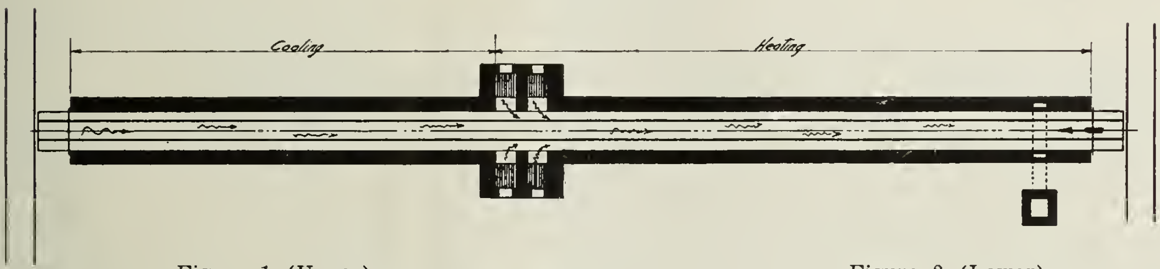


Figure 2 (Lower).

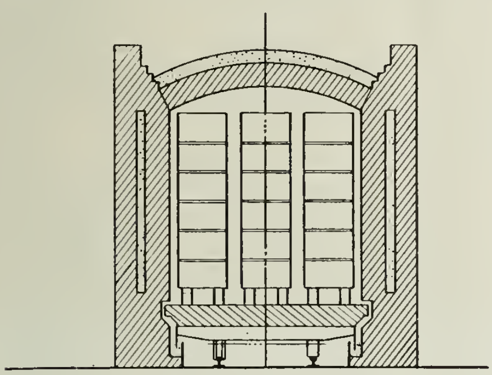


Figure 3.

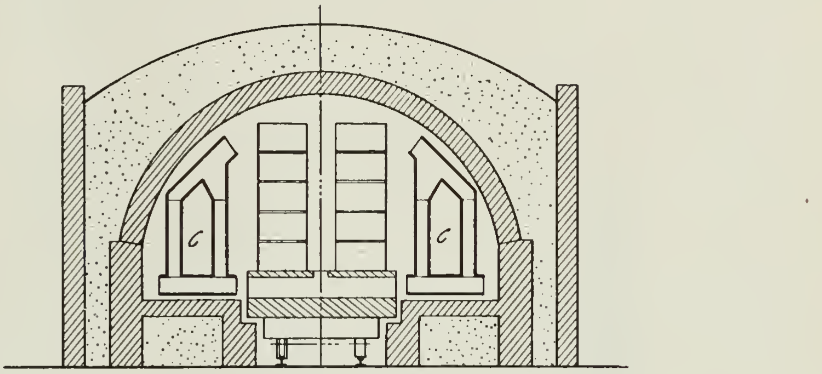


Figure 4.

3. All the placing of ware is done at one place, and all handling of fuel and ashes (if solid-fuel-fired) is localized.

Result—Minimum labor requirement.

4. The thickness of kiln wall and heat-insulating material are varied throughout the length of the kiln in accordance with requirements, i. e., thickest walls and greatest heat insulation at the high temperature zone, both diminishing toward each end.

Result—Reduced construction cost over periodic kilns as well as the chamber and annular types of continuous kiln.

5. There is no periodic heating and cooling of the kiln structure, which is so ruinous to the masonry of all other types of kilns.

Result—Minimum repairs.

There are two types of continuous tunnel kilns in use in this country at this time,the open, or direct-faced, type and the muffle type.

The purpose of any kiln is to generate heat from any one of several available fuels and to transfer this heat to the ware at the maximum permissible rate. A further requisite being, of course, uniformity of heat application to the entire cross-section of the setting ware as it advances through the high-temperature zone.

In the case of the direct-fired kiln (Fig. III) the heat transfer is largely through convection—the highly heated combustion gases passing through and around the entire setting of ware. No other method of heat transfer is as direct and quick as this. However, it is important that no part of the setting shall become greatly overheated, and that the entire cross-section of the ware be subjected to gases of as nearly the same temperature as possible.

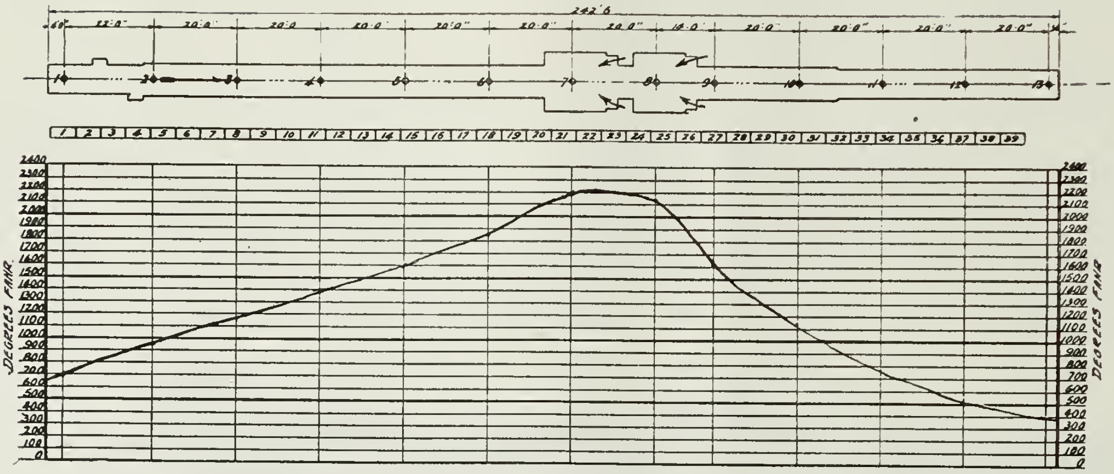
In the muffle kiln the heat is generated in combustion flues extending longitudinally through the tunnel on each side of the train of ware and usually adjacent to the lower part of the setting. (Fig. IV.) The transfer of heat from these flues to the ware is accomplished by radiation principally and to some extent by convection. Some advocates of the muffle type of kiln maintain that the heat transfer is largely by convection. This is a beautiful theory, but is borne out by neither mathematical calculation nor practical operation. A careful and logical analysis of the case points strongly to radiation as the principal method of heat transfer. However, whatever the case may be, the fact remains that time is a very strong element in this transfer of heat from the combustion flues into the ware, and this is the factor which controls the capacity of the kiln and has a great deal to do with whether the kiln is a profitable investment or not.

Considering different types of kilns of equally good performance, the most desirable one would be the one that is simplest in construction and operation. Low first cost and low cost of upkeep are of great importance to the manufacturer.

These kilns can be found in lengths varying from 60 feet to 360 feet and with cross-section varying from one sufficient to carry a small clay platform with one layer of spark plugs to one 6 feet wide by 7 feet high above the car platform.

The fuel used is coal burned in hand-stoked furnaces, coal fired in gas-producer furnaces, producer gas from isolated central producer plant, natural gas and fuel oil, or a combination of the last two.

The difficulties encountered in connection with the tunnel kiln in the past have been both structural and operating. Poor refrac-

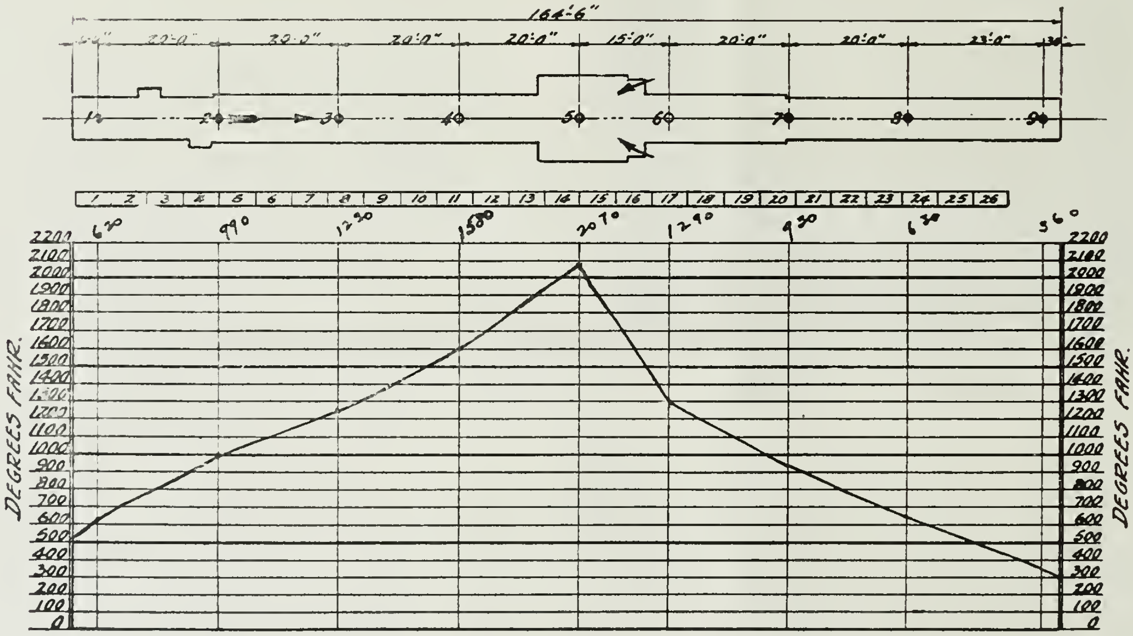


HEAT RECORD
BISQUE KILN
CHELSEA CHINA COMPANY
NEW CUMBERLAND, W. VA.

Cone 11 down
Cars drawn at 1½ hr. intervals
100 doz. ware per car.
75000 cu ft. gas with original burners
65,000 cu. ft. gas (@150°F) per 24 hrs.
with improved burners

DATE Thurs. Oct 30 1919 HOUR 9 A.M. TAKEN BY F. M. Hartford

Figure 5.



1 hr. car Schedule:

HEAT RECORD
GLOST KILN
CHELSEA CHINA COMPANY
NEW CUMBERLAND, W. VA.

av. 68 doz. per car -
54 to 72 saggers

DATE Dec 12-1919 HOUR 8 PM TAKEN BY F M H

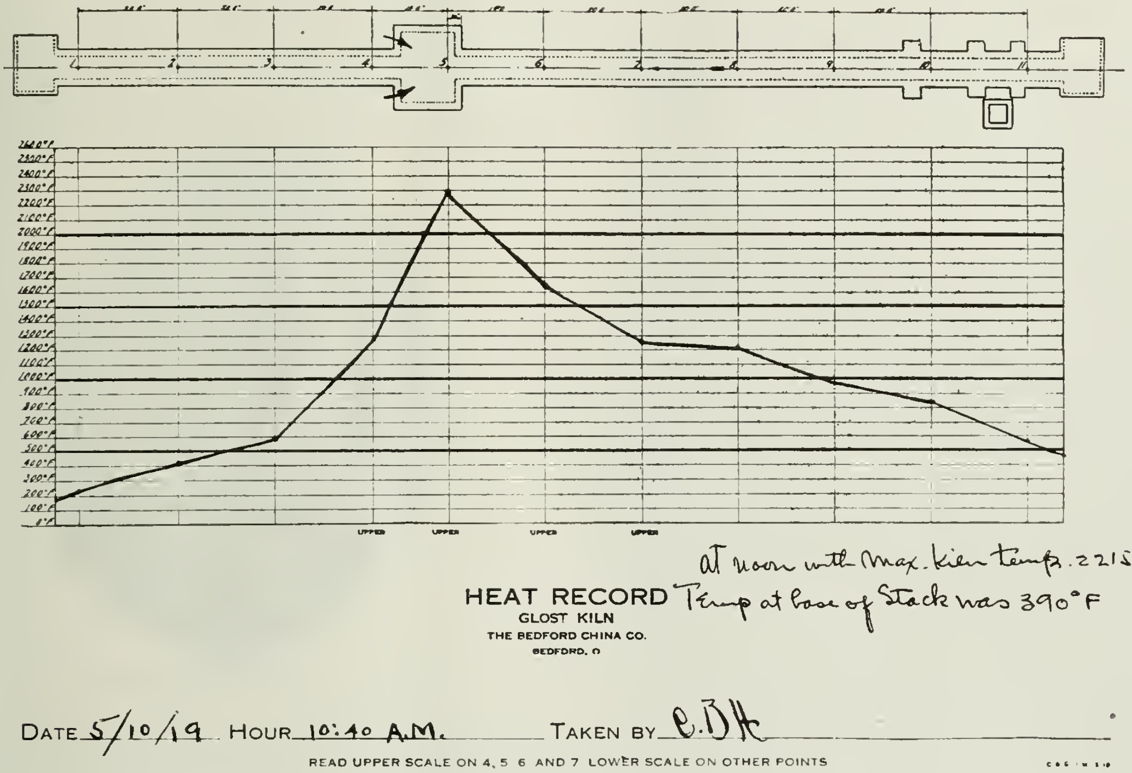
Figure 6.

tories, poor masonwork or improper bracing have in some instances resulted in the sagging of sections of the tunnel crown. This interferes with the passage of ware through the tunnel, in some instances tipping it over and requiring that the kiln be closed down. Expansion of the kiln wall in a lengthwise direction often causes considerable trouble unless properly guarded against by the use of adequate and efficient expansion joints. The same can be said of the track rails. We are usually bothered more or less by the expansion in small kilns and furnaces, so we can naturally expect to have considerable expansion to take care of in a structure, say, 300 feet long.

The cars or trucks have given trouble in many instances. Too small wheels were used until very recently, and these, together with unsuitable bearings and little or no lubrication, made it difficult to propel the cars through the tunnel.

Maintenance of the refractory clay platform of the kiln cars is also an item which has required considerable study.

From the standpoint of kiln operation the greatest problem is, and always has been, to secure an even temperature over the entire cross-section of the ware—top, sides, center and bottom. As the ware proceeds towards the high temperature zone it passes between hot walls and under a hot crown, but underneath it is the car platform, which is entering with the ware and therefore no hotter than the ware itself; in fact, it is not as hot, for the reason that effort is being made to keep the car trucks just under this platform cool. Furthermore, the heat is applied usually at both sides, or, in the case of one kiln, from the top. These conditions, together with the fact that hot gases traveling longitudinally in a flue or tunnel always tend to pass along the upper portion, result in a very strong tendency to overheat the upper parts of the setting of ware, while the ware in the center and bottom of the setting will be underburned.



At noon with Max. Kiln temp. 2215°F
HEAT RECORD Temp at base of Stack was 390°F
GLOST KILN
THE BEDFORD CHINA CO.
BEDFORD, O

DATE 5/10/19 HOUR 10:40 A.M. TAKEN BY C.B.H.
READ UPPER SCALE ON 4, 5 6 AND 7 LOWER SCALE ON OTHER POINTS

Figure 7.

Securing the proper heat gradient throughout the length of the kiln has not been a great problem, as will be noted from the curves of three different kilns (Figs. 5, 6 and 7). These curves were taken from kilns, all of which were firing white wares and while the temperatures at the ends seem dangerously high, yet no trouble was experienced. Lower temperatures at the ends are desirable and can readily be secured if the kilns are built longer.

The continuous tunnel kiln can be considered successful beyond doubt for white wares. You gentlemen are interested in knowing whether it is going to be equally successful in firing building and paving brick, hollow building blocks and drain tile. There are no real grounds for a belief that this kiln will not be successful for these wares. However, it is vitally essential that the designer of this kiln shall be thoroughly conversant with the fundamental principles involved and shall recognize the natural physical laws which control the combustion, circulation of gases, diffusion of heat, etc.

The features which you want in a tunnel kiln are (a) large capacity or daily output, (b) uniformity of quality of your ware, and (c) reasonable cost of construction, and probably another point, namely, simplicity of operation. Economy of fuel need hardly be mentioned here, as this is common to all kilns of this character and is unquestioned. In some kilns, and particularly with wares made from crude clays, it is possible to have large output and poor quality, or small output and good or fair quality, but what you must have is a kiln that will give you a large output and at the same time good quality ware, and it is the kiln that will best meet these requirements that you should select.

This kiln is a thing of truly great economic importance in this country from the standpoint of conservation of our fuel, and it should be welcomed by all manufacturers of burned clay goods.

It is true that there have been numerous unsuccessful attempts made to fire various kinds of clay ware in tunnel kilns, but investigation will show that either the kiln was not adapted to the particular kind of ware or else the designer or operator of the kiln was incompetent.

If you are approached by a promoter of a tunnel kiln you should take the attitude of the man who claimed he was from Missouri and ask that you be shown some of his kilns operating as he pictures them to you. When you see one of these kilns operating successfully on your class of ware or similar ware and you feel that you could attain equal success at your plant, you should make up your mind that you have found the kiln you want to install, but until you have actually seen such a kiln in successful operation continue to investigate. (Applause.)

General Discussion.

C. P. Mayer: I would like to ask Mr. Harrop if it is possible to burn a vitrified paving block in a kiln of that type. I would also ask what the fuel saving would be over the direct fire kiln, and also what the output would be in the thousands per day for one of these tunnels, say, 300 feet in length.

Mr. Harrop: As to whether this tunnel kiln can be used for paving block I cannot say from direct knowledge. I understand this type of kiln for that purpose is being seriously considered at this time, and I hope it will be successful; that is all I can say. I don't think there is any question about it. I believe myself that the most difficult problem we have confronting us is the burning of paving brick with this type of kiln.

So far as the fuel question is concerned I will say if the temperature you go to in burning paving brick is not over cone two your fuel consumption would be between eight and nine per cent. of the weight of your ware. I cannot tell you in pounds per thousand brick, but you can figure that way somewhere between eight and nine per cent. in pavers.

As to output, I have figured out about 35,000 paving brick or block per 24 hours. With the same size car and the same size tunnel I should judge the output for building brick would be about 40,000. It may be slightly less.

Mr. Mayer: By reason of the material being stacked upon movable cars, how is the bottom sealed against the cold air rushing in? I noticed on one of the cars on the curtain, the one on the left-hand side, seemingly under the car is a hanging blade; another standing vertical blade; both blades project into a trough (supposed to be filled with sand). Does that seal the bottom of the cars, and if it does must the tunnel be full of cars? Is there any way for the space between the cars through which the cold air may flow to become sealed by putting the cars together in some manner?

Mr. Harrop: In some designs of kilns there is no attempt made to close up the space between the cars. Understand, this train is pushed through. The last car that is put in pushes the whole train ahead, and when these cars get together in some designs there is an attempt made to seal that space. In others there is a tongue and groove connection between the cars. In some of these kilns the track or running gear compartment is sealed from that part above the platform by sand seals. Each and every one of these tracks has a steel plate bolted to each side, and these form a practically continuous apron which drags in the trough of sand, thus practically sealing the space below from the space above. In other kilns there is no attempt made to seal the bottom from the top.

Mr. Mayer: Are any of these kilns burning pavers, face brick or building brick at the present time, and, if so, does it burn the pavers uniformly on top and bottom of the cars, or will they be underburned at the bottom and overburned on top?

Mr. Harrop: I cannot answer that question from a personal knowledge. I know there have been attempts to do this, and have been unsuccessful at the beginning. A great many things which have been attended with the greatest success have been failures at the start. I am told these attempts to burn building brick have worked out satisfactorily. I would not want to vouch for this, but I am told such is the case.

President Hammond: Any one else want to ask Mr. Harrop any questions? If not we will proceed with the next.

Secretary Randall: Mr. Conrad Dressler of New York City has some slides of a tunnel kiln which he has asked permission to show.

Muffle Kiln Versus Direct Fired Kiln.

Conrad Dressler, New York City. Mr. President and Gentlemen: I am glad to have had an opportunity of hearing Prof. Harrop's paper. This meeting shows how much the tunnel kiln has gained in favor since 1915, when I came over to this country for the first time. Then the tunnel kiln was almost unknown here. Only one or two of the kilns had been built.

Well, it is my opinion, also, that the tunnel is the form of kiln we shall all have to come to. On many points I am in perfect accord with Prof. Harrop. The tunnel kiln is not only the cheapest as regards fuel, but is capable also of giving by far better ware than the periodic kiln, and, as the heat is maintained constant throughout the structure, walls and vault do not suffer in the same way as they do in periodic kilns, which expand and contract continuously.

But certain features have been put forward which are not the most important ones.

In the tunnel kiln, or in any kind of kiln, the most important point is the perfect control of the heat. That I put forward as the first essential in any heat process, and this is where I think we can claim for the muffle kiln a vast superiority over the open fire tunnel kiln.

If we examine what happens when the flame, whether from raw coal or gas, or oil is turned loose among the goods to be fired, whether in an open tunnel or in a Hoffman or any other kiln, we find that in order to burn completely and properly mix with the necessary air that air must be mixed with it in the right proportions as it enters the kiln, or at the fire mouths. Now this is an impossibility in the open fire kiln. Part of the air is necessarily supplied cold and part of the fuel burnt outside of the kiln. When the partially burn gases enter among the goods they just burn where they can, rising naturally and by the most convenient passages to the vault.

The operation is a haphazard one and explains the many failures which have arisen.

But, in the case of the muffle kiln, the operation of burning the fuel, whether gas or oil, is easily under control. Exactly the right proportion of air, all of it at the hottest degree, is drawn into separate combustion chambers, where it is mixed with the correct quantity of gaseous fuel, and the transference of heat is by means of convection currents of air, circulating transversely of the oven and bathing the goods in an equable temperature, and not directly by means of the flame. Thus, our first purpose in the use of internal combustion chambers is not, as has been suggested, to screen the goods from the naked flame, but to control the heat in the kiln. Only by burning fuel in confined and closed vessels is this possible.

Ex-President C. P. Mayer, Bridgeville, Pa.

But other advantages spring from this control. Dr. Seger, who has just been quoted, has shown that in the continuous Hoffman kiln never less than ten times as much air is passing through the oven than is needed for burning the fuel. The same is true in the case of open tunnel kilns. What waste of heat! 12 cu. ft. of air weighs one pound. Hundreds of thousand cubic feet pass through the oven daily unused and all having to be heated to the temperature of the goods. As a matter of fact, a pound of air is more expensive to heat up than a pound of clay.

I originally started out by building an open fire type of tunnel kiln. I have gone through that experience. Many of the foremost oven builders of Europe mentioned today are, or have been, among my friends; for instance, Mr. Otto Bock himself came over to England to see my first kiln in operation and to observe the new principle on which its success is based. I can assure you that it was not without reason that he came to the conclusion, as did Dr. Kramer and others, that the first and most important step had been taken to make the tunnel kiln of true commercial value, and that this was centered in the separate and independent combustion chambers, which insures the control of the burning gases and enables all the goods to be uniformly subjected to the same conditions from their entrance into the kiln to their exit.

I have had a great deal of experience also of other types of kilns. I contend that in periodic and other kilns the flame must be long enough to reach the end of its course within the kiln itself, for if the flame is short the goods nearest the mouth will be overfired and those farthest from it will be underfired, but in the muffle kiln the flame can be quite short without detriment, because the heat is not imparted by the burning gases, but by means of air which gives off its heat as it descends among the goods.

Chas. B. Fraunfelter, Zanesville: I am going to fire with natural gas and producer gas the same as you do. The stack at the end of my kiln is large enough; I am going to have perfect combustion by reason of perfect manipulation. What is the difference between an eight by six by eight chamber under perfect control and a muffle kiln?

Mr. Dressler: One difference between burning gases in a vast open periodic kiln and in a closed and small sectioned combustion chamber is that in the first case you require a flame as long as the passages which it has to travel among the goods before leaving the kiln, and that the end of this flame must be at least as hot as the top temperature to which the goods are being fired. Therefore the flame cannot be burnt completely close to the fire mouth. In the second case there is every advantage in the rapid combustion which is so much more efficacious and economical.

Mr. Fraunfelter: I can't see any difference between the round down draft kiln and the muffle kiln. The point I raise is the size in the combustion chamber. The drawing which you show illustrates that you must have a combustion chamber.

J. A. Mercier, Detroit, Mich.

Mr. Dressler: Perhaps the best indication of the value of the process is seen in the practical result it gives. Some time ago some people came to investigate our kilns. I will not mention their names. They were after economy and efficiency, and wanted to make sure that their selection would be right. They sent their research engineer to the plant where one of our kilns is running and kept him there for five weeks. During this time he diligently watched our kiln day and night, and when he got through with his experiments and made his report these people decided upon having us build them a kiln. This was because their man had learned that we were giving absolutely uniform burns. I have a number of slides which illustrate the burning of both large blocks and smaller pieces of ware.

R. C. Burton: Mr. President, I think the films all speak for themselves, but there is another gentleman here who wants to add a little to this discussion on tunnel kilns.

J. B. Owens, Zanesville: Mr. President and Gentlemen—I am extremely sorry that I haven't at least thirty minutes of the time that has already been spent on tunnel kilns. Each and every one of you gentlemen who are here and who are in the brick business are in that business to make money, and when you build a tunnel kiln, which you will do sooner or later, you want to buy the very best kiln that will serve your purpose. Now it is one thing to offer to you a tunnel kiln and it is another thing to actually give you a tunnel kiln that will perform the duties for which it is sold. It is one thing to sell to you the privilege of buying the license of a tunnel kiln and it is another to sell you a tunnel kiln, erect it and guarantee its performance. You have had an illustration here this afternoon of two kilns, one a muffle kiln and the other a direct fire kiln, and you have heard arguments in favor, particularly of the muffle kiln, as to its economy of fuel and its capacity. I want to place before you this fact: Is it likely that a combustion chamber of limited size that must radiate its heat will do it as effectively if that heat was directly applied to the products to be fired? Gentlemen, the curvatures upon that screen showed you that there was one particular peak, one at which heat reached a given point, the highest temperature, while the other curvature showed you it went up straight and traveled an even plane and then went down almost in a manner as to show you exactly how the heat fired the goods as well as how it cooled them. You understand that anything and everything made out of clay must have a soaking heat, almost be at its highest temperature for a given number of hours, or else that product is not burned sufficiently. It is absolutely impossible. If you have a temperature line that gives you that soak naturally you are burning with greater rapidity than if you have a high heat at one particular spot. This long soaking heat can only be obtained in a direct fired kiln. The action of the heat, as shown on that screen this afternoon, was absolutely correct, because these lines were taken at different points in the kiln, which indicated the exact registration and movement of that heat. I am taking issue on this because great stress was placed by the muffle kiln man on what a muffle kiln would do versus a direct fired kiln. I also heard stated here that a long blaze indicated a complete combustion. A long blaze does not indicate complete combustion. No blaze indicates a complete combustion. Wherever there is a blaze moving down the kiln you can rest assured there are unburned heat units there or there would not be any blaze. In a direct fired kiln, if you have a perfect combustion chamber, you have perfect combustion, and if you look down that kiln you will see nothing but a white heat temperature, pure temperature going down and around your goods. If you could send a white paper down through there without being burned it would not show any stain on the paper at all. A muffle is of no value whatever as to the value and character of your product. I could talk on this for a long time and take up every item, showing the action of heat in direct fired kiln, because we have built a number of them; we have fired a number of them, burning anything there is to be made of clay almost. We are firing brick, a thing easy to theorize on, but not so easy to prove, because there is a great deal of difference between theory and actual facts. I am sorry it is so late in the day, for we have so few people comparatively to talk to. If you are in business to make money you must be educated to the tunnel kiln, because the tunnel kiln has come to stay, just the same as the automobile and the flying machine. I am going to close by adding one little thing instead of continuing the tunnel kiln argument, and that is to congratulate this organization, or rather to congratulate you, upon this organization. I want to congratulate the constructive minds that created it and the constructive minds that have kept it together as an organization. It is a wonderful organization, and if you use the advantages of this organization to its utmost you will gain such knowledge pertaining to your business as will make you a power in your business and will make you money where otherwise you will lose money. I have heard discussions today which I had a notion to take part in, because it ought to be of vast benefit to every man here, and I am sorry now that I did not, because I think there were a great many points that could have been brought out and that would have been of much benefit. I am very glad to have been here. (Applause.)

Secretary Randall: I think I can safely say that Mr. Owens will be given an opportunity to talk to us next year.

MOVING PICTURES OF BRICK-PAVED ROADWAYS.

President Hammond: The next on the program is an illustrated address entitled "Traveling Over Brick-Paved Roads." The author, Mr. Clark R. Mandigo, of Kansas City, Mo., is unable to be present, but he has a very able representative in our staunch friend, Will P. Blair, of the National Paving Brick Manufacturers' Association, who will entertain us with some moving pictures.

(The pictures were very interesting, but of course cannot be reproduced. Some parts of the views shown will be given together with Mr. Mandigo's paper in a subsequent issue of The Clay-Worker.)

President Hammond: We have reached the final number on the program, a paper by Mr. R. T. Stull on "Government Service on the Development of Clay Products." Prof. Stull is connected with the Bureau of Mines and is one of the college men who has done a great deal of constructive work for the clay industries. He is one of the best educators we have.

GOVERNMENT SERVICE IN DEVELOPING THE CLAY INDUSTRY.[1]

BY R. T. STULL.

Mr. President and Gentlemen of the Convention:

The three Government agencies in a position to assist the clay industries are the Geological Survey, the Bureau of Mines and the Bureau of Standards. The Geological Survey primarily has to do with the minerals as they lie in the ground, their character, the extent of the deposits, etc. The Bureau of Mines deals with the mining, refining and utilization of these minerals, and the Bureau of Standards has to do with the testing and standardization of the finished products.

Although the organic acts point out the fields of activities of the three Government agencies, the nature of the work of each is such that there must necessarily be a narrow margin of overlapping at the border lines. The existence of this common ground does not indicate that there is duplication of work. On the contrary, the common strip of ground should be the "lap weld" of understanding and co-operation between government bureaus.

The Geological Survey and the Bureau of Standards have been established for a period of years and the splendid work that they have been doing for the benefit of the ceramic industries is well known and worthy of the highest praise. On the other hand the Bureau of Mines is the youngest member of the three and its ceramic activities are so new that there are but few industries familiar with the ceramic work it is doing.

It is not within the scope of this paper to describe in detail all the different lines of investigation of these three agencies, but more especially to touch upon the work that the Bureau of Mines is doing and can do for those interested in clay and allied industries.

An act of Congress[2] of March 3, 1915, authorized the establishment of ten mining experiment stations in addition to those already established, provided that not more than three stations be established in any one year. At the present time there are eleven mining experiment stations, six of which have been established under the above named act.

The ceramic experiment station known as the "Columbus Station" was made possible by an allotment of twenty-five thousand dollars which became available July 1, 1917, but the formation of an organization and the actual work did not commence until the following September.

Of the several investigations undertaken by the station during its two and one-half years of activity, only three will be mentioned in order to convey an idea of the nature of the work the station is doing for the benefit of the public.

Dolomite Investigation.

Prior to 1914, about 90 per cent of the magnesite used in refractories came from Austria and Greece. When these supplies became unavailable, it was necessary to draw upon the American magnesite deposits.

The workable magnesite deposits of the United States occur in the States of Washington and California. It is necessary to place magnesite in a "dead burned" or "non-slaking" condition before it can be made into bricks. The Austrian magnesite contains an impurity of iron oxide which has been uniformly distributed by nature. It is, therefore, only necessary to mine and calcine the natural rock in order to place it in a dead burned condition. The American magnesite occurs in such a pure state that it is necessary to grind the rock with an addition of iron ore before calcining. Since it is impossible to obtain a uniform distribution of the iron ore, it requires a much higher calcining temperature to place the domestic magnesite in a dead burned condition and the resulting product is said to be inferior in homogeneity to the foreign product.

The bulk of the magnesite refractories are used east of the Mississippi river. The low cost of labor and ocean shipping make it possible to deliver the foreign magnesite to the refractory manufacturers at a lower cost than is possible with the higher cost of calcining, labor and railroad shipping from the Pacific coast to eastern points.

Dolomite, the double carbonate of lime and magnesia occurs widely distributed in the eastern states and lies at the very doors of some of the steel plants. The State of Ohio contains thousands of acres of dolomite substantially on the surface. For a number of years attempts have been made to use dolomite as a substitute for magnesite as a refractory material. A number of patents have been issued on the preparation of dolomite for refractory purposes, and a number of firms have placed prepared dolomite on the market in lump form under various trade names.

Charles F. Clippert, Detroit, Mich.

Up to the present time no one seems to have produced a dolomite refractory brick that will withstand a long period of storage without slaking or dusting, due to the presence of the troublesome lime.

About two years ago the Ceramic Station undertook the investigation of dolomite as a substitute for magnesite. The different patent processes of preparation have been investigated as well as other methods of dead burning not patented. The results of all this work have been that the station succeeded in making dolomite fire brick which withstood six months' storage before showing signs of disintegration.

In France[3] a dolomite fire brick is made which must be placed in service in the furnace within fifteen days after it comes from the kiln in order to obviate disintegration by air slaking.

If a practical dolomite fire brick can be developed which will resist disintegration and compare favorably with magnesite brick under service, it will mean much economically and develop a new industry to utilize an inexhaustible raw material of low initial cost.

White Clays.

Over fifty per cent of the white clays used in the better grades of pottery, oil cloth and paper are imported from England. It is claimed that these clays possess certain desirable physical properties not found in the domestic clays.

If the Nation is to be independent of imported clays and able to compete with foreign products, it will be necessary to either find new clay deposits equal to the foreign or to improve the present known clays by better mining and refining methods in order to attain the same object.

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[1] By permission of the Director U. S. Bureau of Mines.

[2] Van H. Manning, Bulletin 715 "Experiment Stations of the Bureau of Mines, p. 73.

The experiment station began the investigation of the white clays east of the Mississippi river in July, 1918. Over one hundred clay samples have been gathered in the field by representatives of the Bureau of Mines and the Geological Survey and sent in for examination.

The physical properties of these clays are being determined in comparison to those of the imported clays, such as shrinkage, strength, porosity, color, working properties and behavior when used in a standard porcelain body.

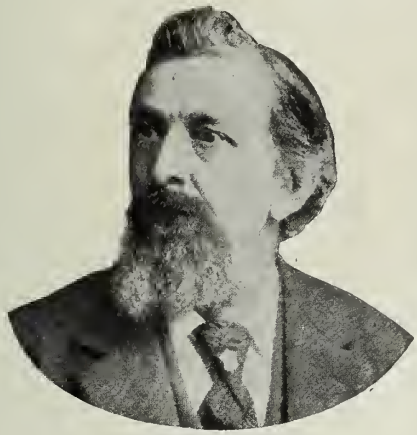
Studies are made on fineness of grain. The clays are separated into their different grain sizes by screening and elutriation and the different grain sizes are examined microscopically in order to determine the mineral constitution, and methods of improving the refined clay by separating objectional minerals are also being investigated.

Graphite Crucibles.

Until recently most of the graphite and bond clay used in the manufacture of graphite crucibles were imported. It was considered that crucibles made from Ceylon graphite and German Klingenberg clay were superior to crucibles made from domestic materials.

The graphite crucible investigation was undertaken about two years ago in order to determine the crucible making properties of the domestic bond clays and graphites.

Twenty-one different bond clays and twenty graphites are under investigation. The laboratory tests on the physical properties of clay-graphite mixtures have been made, involving over 10,000 physical measurements and calculations. Over 450 full sized crucibles have been made and tested under brass and steel melting practice. Most of this work has been done to determine the crucible making properties of the domestic bond clays and only a few preliminary tests have been made to determine the crucible making properties of the graphites.



John T. Hummert, Quincy, Ill.

Two different tests made on brass melting crucibles in two different foundries indicate that the domestic flake graphite gives a crucible of greater service than crucibles made from the Ceylon graphite. These two tests are not sufficient to be conclusive and a more extensive series of experiments are now in progress to determine this point.

Of the bond clay tests, the work has been sufficiently thorough to indicate that there are two American clays superior to the German Klingenberg clay for bonding brass melting crucibles and that there are thirteen domestic clays ranking higher than the Klingenberg clay for steel melting crucibles.

Insofar as bond clays for graphite crucibles are concerned, we are nationally independent since the hold which the Klingenberg clay once had on the crucible trade has been broken. This has come to be well recognized by the crucible manufacturers and it is a foregone conclusion that we will never return to the use of Klingenberg clay for making graphite crucibles.

These three problems have been mentioned in order to give an idea of the kind of work the Ceramic Station has been doing. The station is new and up to the present time it has not undertaken the investigation of problems of direct interest to the brickmaker, but preparations are under way to take up such problems.

A small brick plant is being installed. This consists of a dry pan, piano wire screen, elevators, pug mill, stiff mud brick machine, carrier table, cutting table, dryer cars, two tunnel dryers and a round down-draft kiln 15 feet inside diameter. When completed the station will be in a position to make investigations on a scale comparable to factory practice.

The Ceramic Experiment Station is not permitted to do work for private parties but is authorized to investigate problems of interest to a large group of manufacturers or to the public. It is also authorized to co-operate with different Government and State agencies, with the industries and industrial organizations.

The Experiment Station invites the co-operation of the brick manufacturers in the investigation of manufacturing problems of interest to the industry and is ready and willing to assist in any way that it can. (Applause.)

General Discussion.

President Hammond: The discussion of Mr. Stull's paper is to be led by Mr. John T. Hummert, Quincy, Ill.

Mr. John T. Hummert: The paper presented by Mr. Stull is a very valuable and instructive one. It is foolish for me to try to enter into a discussion of it, but nevertheless these professors like honest criticism and to hear opinions from us young fellows. I will not go back to the time when I was cradled in the sand box before the civil war, nor will I go back to the panic of 1875, when Prof. Stull and his colleagues, Bleininger and Purdy and others, were still running around in short dresses. At a time when men were working on a brick yard for $1.10 a day. Where during the war period, up to 1866, they were receiving $2.25 per day, but I will refer to my first convention, held in Chicago in 1894. At this convention Professor, now Colonel, Orton was on the program, and delivered a paper on the necessity of technical investigation. Prior to this time brickyards were scattered all over the country, making brick by hand; wood was used for fuel, because the brickmaker thought it took flame to burn his brick. But our young professors, Stull, Bleininger and Purdy, had then received their diplomas and were setting us problems, and they told us that in order to burn brick you needed heat, but no flame. Heat was what we needed to make our brick hard and substantial. Many of the brick made prior to this time were good enough brick, but they were not burned hard enough, and the result was we had a lot of damp houses, and the lumberman would use them in an argument for frame houses. But when these young professors got to studying, and said here heat is what you want, and not flame, and you want to use coal. Of course coal was used to some extent prior to 1894, but of the very best grades. I remember at one convention, I do not know exactly the date, if you will look through your convention report you can find it, Brother Anthony Ittner made the remark that he could buy slack coal at a price of $5.00 per carload, and didn't have any freight to pay. The only expense he had in addition to the $5.00 was the switch charges, which was $2.00 per carload. I was making brick at a time when stiff mud and brick was unknown. Mr. Gunsaulus, who invented the Fate and Freese machines, came to my plant in 1886 and wanted to sell me one of his machines. But I didn't trust him, but he said, "Come to St. Louis, I am going to have a machine on exhibition there and in working order." During that fair week I visited St. Louis and was well pleased with the machine which Mr. Gunsaulus had in operation. I finally bargained for one, with the proviso that I should have a week or ten days' option on it, to learn if it really made a good product, and whether we could sell that kind of brick. I went home and consulted the contractors with whom I had dealings, not only in the city of Quincy, but in the surrounding country. They told me they could not use them for face brick; they might be all right for backing up. I hesitated for the reason that I thought our clay was rather short, and if the mud was lubricated with water the brick would crack in drying, and therefore I cancelled the order for the machine. In 1887, at one of our Illinois State Brick Conventions, the Galesburg people were under the impression that the only clay suitable for street paver brick was to be found at Galesburg, but an old brickmaker, Mr. D. O. Loy, got up and made this statement, "Gentlemen, don't you ever get it into your heads that the only clay is at Galesburg. I think the Lord Almighty has deposited clays suitable for street paving brick

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[3] Bied, J. "Refractory Products," La Ceramique, 372 (1919), p. 35.

all over the United States, wherever it is needed." Well, the universities picked up this matter of burning brick with coal, making brick by the stiff mud process and experimenting with clays suitable for making street paving brick, with the result that brick were made wherever needed, even from surface clay. The plant that I am connected with now is making brick from the same material we were making our red building brick twenty-four years ago. The brick are still in the street, and will possibly be there for twenty more years to come. So that you see what the professors and students have done for us the past twenty-five years. Twenty years ago Professors Stull, Bleininger and Purdy used to come to us and buttonhole us and ask for our opinion and advice. Today we have to come to them. It reminds me of the young priest, who, while educated and a good scholar, eloquent in his expressions, but when he got into the pulpit he invariably got stage-fright. It so happened one day, when he was out making some calls, that the older priest of the church slipped into the room of the young priest and found on his table the sermon he had prepared for the following Sunday. He looked it over and memorized it, and the next day, being Sunday, the Reverend Father delivered the sermon at First Mass. The young priest, who was to deliver the sermon at the Second Mass, or High Mass, heard it, and his blood boiled. When he got into the pulpit to deliver his sermon he said: "Beloved brethren, naturally very few of you heard the splendid sermon that the Reverend Father gave at First Mass this morning; it is so good a sermon that I made up my mind to repeat it here to you at High Mass;" and the young man never had stage-fright again. The same thing applies to our young professors, instead of coming to us for advice we have to take off our hats to them.

Now, friends, there is a good deal of human nature in us all; we all like commendation. When we see the government, through these young professors, bringing forth results which we desire, let us go to them with a hearty handshake. They in turn will, if possible, discover something good for us. The results will be we create a friendship which adds a lot of pleasure to the routine of business. Let us join hand in hand, separately and collectively, with these educators, and the result will be we will develop higher instincts and nobler impulses of the human nature. The result will be that we will be better men and better brickmakers. I thank you. (Applause.)

Secretary Randall: We have had one of the best final sessions we have had for many years. It is really surprising that so many have remained and manifested deep interest right up to the finish, when we consider that many had to leave to catch early trains, the attendance at this final session is gratifying. Our program is completed with the exception of a final word from our president.

President Hammond: I think we cannot be thankful enough that we have had the advantage of having with us these scientific men to assist us. We are very grateful to them. We cannot help but go home feeling we have advantages in the scientists being our friends. There has come to be a realization among the brick manufacturers that they occupy a dignified position in the manufacture of brick. That the prices which they are enabled to obtain are now more in keeping with their business. I notice some of our members are rather in an apologetic frame of mind. It is not necessary to make an apology if you have made a greater per cent. of profit on your output during the past six months than you have been able to do heretofore; don't become easily surfeited with it. There are other manufacturers who indulge in a very gluttony of profit and there is no word said against it by themselves or any one else, and I admonish you, do not fear criticism or the high charge of profiteer. Fear is the most despicable thing that can come into the mind of any man in any phase of his life. No man should fear anything but wrongdoing. To get a fair return for your labor is certainly not wrongdoing. I have grown old; no, I will not say old in the service, for no one grows old except the devil, but we have come to a time when we have managed to learn our own affairs. This is not a business organization, and perhaps the secretary will charge me privately for talking of this business. We want from this education which we have received here to so conduct our affairs that we may profit until we meet again, which will be the next annual convention. We can go from here feeling we have met our friends, have imparted some information and have received a whole lot more, and feeling that peace on earth and good will toward men is the main object, then we have accomplished something. Gentlemen, we are adjourned.

CONVENTION ECHOES.

GREETINGS FROM LIFE MEMBERS.

Cincinnati, Ohio, February 16, 1920.

Friend Randall:

It was my intention to have been in Columbus on Wednesday and to have expressed in person my appreciation of the high compliment paid me last year by making me a life member of the National Brick Manufacturers' Association, but my doctor forbids me to leave home at this time, owing to the weather and the prevailing epidemic of the "flu." You have my best wishes for a successful convention. J. M. BLAIR.

GOOD WISHES FROM A CHARTER MEMBER.

St. Louis, Mo., February 17, 1920.

Dear Teddy:

Your nice letter of the 11th came duly to hand. I am sorry to advise you that neither Warren nor myself can be present in person, but rest assured we will be with you in spirit. Trust you will have a banner convention, one of the most successful annual gatherings in the history of the Association. Give to one and all of our membership and those with whom I am personally acquainted my kind regards and best wishes. Mrs. Ittner also wishes to be remembered to you and Mrs. Randall.

Again thanking the Association for the high honor conferred on me last year, I am, Yours truly,

ANTHONY ITTNER.

GREETING AND REGRETS FROM AN OLD FRIEND FROM SOUTH CAROLINA.

Dear Mr. Secretary:

Along with the enclosed check and application for membership in the N. B. M. A. goes my very best wishes that my fellow brickmakers may enjoy the happiest and most profitable convention in history and a deep sense of my loss in being deprived of the privilege of meeting with them this year.

The activities of the convention have, since my boyhood days, been of keen interest to me and associated with some of the most sacred memories of the past. I am proud of its achievements, confident of its future and anxious to assist in all its good works.

With kindest personal regards for its honored secretary, I am,

Yours sincerely,

LINCOLN S. MORRISON.

Florence, S. C., February 17, 1920.

A VOICE FROM CALIFORNIA.

Dear Secretary Randall:

I fully appreciate the honor conferred in appointing me a member of the Committee on Fire Prevention.

Like all good clay products men, I would say that the best means of preventing fire was to build of brick, hollow tile and other clay products. Seriously, however, this is exactly what Europe is doing and has done for many centuries. It is the only reason why their fire loss is approximately 10 per cent. of that in the United States and Canada. The latter builds in large part with wood. Franklin H. Wentworth of Boston, Mass., secretary National Fire Protection Association, made a very interesting address at Chamber of Commerce luncheon in this city in October of last year. He stated that Glasgow has an annual fire loss of $325,000, while Boston, which is smaller in population, averages

$2,000,000. Berlin burns about $300,000 a year, while Chicago, the same size, averages $5,000,000. Denver, El Paso and Salt Lake City are all brick cities. I would suggest that you obtain the average fire loss from these three cities which would clinch the argument when compared with other cities of similar size and even smaller size.

I would, of course, like to be at the national convention at Columbus this month, but having been East recently, I can not be there, much as I would like to. You have my sincerest, best wishes for a good convention.

Yours very sincerely,

Los Angeles, Cal., February 7, 1920. HOWARD FROST.

SORRY TO MISS THE THIRD COLUMBUS CONVENTION.

Wilkes-Barre, Pa., February 20, 1920.

Dear Mr. Secretary:

Inclosed find check for annual dues of myself and son Will. It was impossible for either of us to attend the convention, as Will was sick in bed and I was threatened pretty hard and did not care to be in Columbus under those conditions. I have a very distinct recollection of having attended a convention there when the weather was extremely cold.

From reading the program I am satisfied that you have all had a very agreeable and profitable convention this year.

With best wishes, I am, Sincerely yours,

GEO. T. DICKOVER.

AN ABSENTEE REGRETS.

Dear Mr. Secretary:

The writer wishes to thank you for your letter of February 7th with advice that I have been included in your program for an informal talk on "Treatment of Clay in the Bank."

As you know, the writer usually aims to attend these conventions and gets a great deal of information and enjoyment from same. But due to some sickness and death in the family, will be unable to attend the coming one. But can assure you that my appreciation of your courtesy is extended, and with kindest regards, I am,

Yours truly,

LEE B. HUMPHREY.

Brookville, Pa., February 14, 1920.

Illinois Brick Man Believes in Association Work.

Dear Mr. Randall:

Enclosed, dear Randall, you friend of mine,
A check to pay my year's subscription, you will find.
But this account so long past due
Has often made me think of you.
But as long as you didn't get what I owed thee
You undoubtedly often thought of me.
Slow I have been and must repent;
But console yourself, this money you have not yet spent.

I surely enjoyed the convention held at Columbus this year, and do not regret the time and money spent. I got value received.

I have often heard members say, "What is the use of going to the convention every year? I get the verbatim report and see the money I have saved." Those members are penny wise and pound foolish. It is not alone deliberations on the floor of the convention that you reap the only benefit of attending. It is also the lobby talk, where you can take a brother by the hand and tell him your troubles. In nine cases out of ten he has been in the same boat and found a remedy that never struck your mind before. The same may be said of members coming to you for advice which you will always give cheerfully.

Another reason for attending the convention is the recreation you receive. The friendly handshake and the greetings and smiles make an impression upon you which you will not soon forget.

The business outlook in our locality is good. Our output for the next three months is already contracted for. From the present outlook every brick manufacturer in the United States will have money enough to attend the next convention, where he will be received with open arms and friendly welcome.

Yours very truly,

JOHN T. HUMMERT.

GATES HARKS BACK TO FIRST N. B. M. A. CONVENTION.

My Dear Randall:

Unfortunately it has been impossible to avoid conflict of dates and I shall be unable to be with you at Columbus, having to attend our convention in California.

Please give my kindest regards to all my friends, and the way I hope and feel, that will give you some job.

Do you remember, Theo., that I was the first recording secretary of the Association and then they dropped me? Why did they do it? I never did anything. Well, come to think of it, maybe I've answered my own question.

Very truly yours,

Chicago, February 9, 1920. WM. D. GATES.

BUILDING OPERATIONS AT TORONTO, ONT.

Dear Friend Randall:

I regret that I will be unable to be with you this year, as the Building Officials' Conference is meeting in Chicago at the same time as your convention, but I wish you simply your regular good time, which is "enough said," the week I spent with you being the most profitable and at the same time the most sociable it has been my pleasure to ever experience.

I am now city architect and superintendent of building, Mr. Pearse having left us some time ago. We are very busy now in Toronto in the building line, and I thought it might interest you to know in figures how we are getting along. October, 1919, was the largest in the history of Toronto; November, 1919, was the same; December the same and the three months combined equaled the total building for the year 1917, and was nearly $1,000,000 more than the total for the year 1915. January, 1920, followed right along, making four months in succession, and from present indications February will be in the same class. The actual figures are:

October—	
Value of buildings, October, 1919	$2,490,936
Value of buildings, October, 1918	776,201
Largest October previously, 1913	1,987,027
November—	
Value of buildings, November, 1919	$2,536,045
..Value of buildings, November, 1918	396,385
Largest November previously, 1912	1,651,073
December—	
Value of buildings, December, 1919	$2,039,625
Value of buildings, December, 1918	610,451
Largest December previously, 1912	1,936,685
January—	
Value of buildings, January, 1920	$1,469,330
Value of buildings, January, 1919	225,375
Largest January previously, 1913	1,276,084

I am sending you under separate cover the current issue of the Canadian Engineer (see page 218).

Again wishing your Association all kinds of good luck, I remain,

Yours very truly,

G. F. W. PRICE,

Toronto, Canada, February 13, 1920.

The Best Papers Ever.

Friend Randall:

Sorry I did not get to see you again before leaving the convention but could not get a berth on anything but the afternoon train, so had to make a quick get away.

Take it all in all, with the flu and everything, you had a much better convention than I expected and by far the best papers I have heard at any.

Give my regards to the family.

Yours very truly,

W. W. DICKINSON, JR.

Little Rock Ark., March 4, 1920.

SMALL CUSTOMERS.

One of the good signs of the times that we see cropping out now and then is a pretty general disposition on the part of the trade to take care of and even show preference toward the small customer. It is being recognized today that the small customer in the aggregate makes a big business and a better business than can be had by chasing after the larger customers in price-cutting competition with the other dealers.

THE BANQUET, Thirty-fourth Annual Convention, National Brick Manufacturers' Association, Columbus, Ohio, February 19, 1920.

N. B. M. A. ANNUAL BANQUET

Columbus, Ohio February 19, 1920.

THE EXPECTED HAPPENED at the N. B. M. A. banquet at Columbus. The members have grown to expect something out of the ordinary at the chief social function of the national convention, and their anticipations were realized to the brim at the thirty-fourth annual meeting. A little more than 200 plates were laid, and there were few if any vacant chairs. Those who participated enjoyed an evening of music and oratory that was most delightful. The beautiful ballroom of the Deshler Hotel made a fine picture as our readers will see by the accompanying photograph of same. The musical features supplied by the local entertainment committee were quite unusual. A charming young woman, Miss Lillian Stocklin, with a chorus of twenty girls, sang a number of popular songs. Miss Stocklin made a great hit, several hits in fact, by the very clever renditions of topical songs, making peronal mention of several prominent members to the great amusement of all those present. She was ably seconded by Lieut. Arthur McArthur of the McArthur Brick Company, who sang patriotic and popular numbers, which were much appreciated, as attested by prolonged applause and demands for encores, to which he responded graciously. After grace by Rev. Dr. Chauncey an excellent dinner was served, at the conclusion of which cigars were passed with the compliments of the local committee, and the oratorical feast was started.

President Hammond's Introductory.

President Hammond: Ladies and Gentlemen—Now that we have disposed of the eatables and drinkables, it is up to me to start the real feast, and I will be brief. I wish first to announce that all of the topics you see on this toast list will be delivered according to program with the one exception of General Wood, who sends his personal representative. I notice that Secretary Randall has caused to be written under my name—

"He who would climb and soar aloft must needs keep ever at his side the tonic of a wholesome pride."

I am admonished that "Pride goeth before a fall," and "High spirit before destruction." As I don't want to fall or be destroyed, I will simply quote from a little poem written by a charming poet—

"The night shall be filled with music,
And the cares which infest the day
Shall fold their tents, like the Arabs,
And as silently steal away."

I have the honor to introduce to you the toastmaster of the evening, Lowry F. Sater, of the Ohio State Bar.

Toastmaster Sater's Greeting.

Lowry F. Sater: Ladies and Gentlemen—As a matter of self-defense I think I should say for the benefit of those of you who do not know me perhaps as well as Charley Frank, that I am not a brickmaker. I haven't even been a hod carrier; my only excuse for being here tonight is that Colonel Orton asked me to be here, and I have come to know that man so well that when he asks you to do a thing you had better do it. If my memory is not at fault and my reading is correct, it seems to me that the craft of brickmaking is one of the oldest or first mentioned in the pages of history.

A Voice: Watch out!

Toastmaster Sater: As I remember it was shortly after the Ark had landed—

President Hammond: You are treading on thin ice.

Toastmaster Sater: I judge I should say that when Col. Orton asked me to take this position he told me I could talk on anything I pleased except macadam or concrete, but he warned me to make no reference to those propositions. But coming back to my Sunday-school experiences, I remember the brickmakers were among the first to get their names on the pages of Holy Writ. I do not know how long the land had been dry, but these sons of Shem made up their minds they would never be caught as their predecessors had with an exceeding high water, so they got together and said, "Let us build a tower so high that when storms come and the rains beat upon the house, it will fall not." And they set about with great diligence and industry to build that wonderful tower; and right here your craft must come in for considerable censure. Had it not been for that incident it is only fair to assert that all the people of the world would have been speaking one tongue, but confusion came upon the hod carriers, and the bricklayers, and all the other fellows working on the job, and look what we have today on the face of the earth. It seems to me you people are probably chargeable with this first recorded instance of labor troubles. (Laughter.)

If my memory is true again, that trouble started down in Egypt over making a batch of brick when the overseer insisted that the puggers and offbearers and mixers should make the brick without straw. (Laughter.)

Secretary Randall: I am very sorry, Mr. Toastmaster—

President Hammond: I warned him. (Laughter.)

Secretary Randall: I am sorry to have to interrupt you, but there is an unwritten law in this Association that any man who speaks or refers to the children of Israel, or making brick without straw, shall be fined $5. (Laughter and applause.)

Toastmaster Sater: Colonel Orton, loan me five.

Colonel Orton: The fine is remitted. (Laughter.) I told you to "treat 'em rough."

Toastmaster Sater: However as that may be, I assume from the good manners and grace that surrounds this board tonight that the brickmakers have made very noticeable progress since that affair that occurred when they were under the diurnal of the Pharaohs. Whether you are able to make brick without straw, I don't know; I don't care. It seems to me from the prices that we are asked to pay for them these days you are making them from solid gold, and I have heard in my time of such things as gold brick. (Laughter.) Whether you people are putting out any of that particular line of product I do not know. My earliest recollection of brickmaking goes back to Butler county. It is a wonderful county. I was not born there, but a great many of the distinguished men in Ohio come from Butler county. When I was a boy with my father I used to drive over into Butler county to mill, and on the way we passed a brickyard. I remember seeing an old horse going round, and around, and around, and around, and round, and I don't know but he may be going round there in that same place. I asked my father about that old horse, and he said the horse was turning the sweep and the sweep is mixing the clay, and the clay is what the temperer takes and makes into brick. My father told me a story about that old horse. He said after the brick yard closed down and the proprietor had gotten rich, he turned the horse out to pasture. The horse had been so used to the sweep that he continued to go round and round in a circle, until he dropped dead from exhaustion. One time I asked my father about that, and he said, "My lad, the action of that horse illustrates the force of habit, there is a lesson for you. That horse got so used to going round in that circle that he couldn't keep from going in that same circle. Take a lesson from that and form your habits now and form good habits, so when you get as old as that horse it will be easy for you to go in the right direction as it was for that horse to go in that ring." I acted on the advice of my father and I found it just the easiest thing to do to go along and tell the truth. (Laughter.) I know some of you will not appreciate that, but it is just as easy as can be, and just as simple, because I learned that lesson from the old horse on the brick yard. It has been a good many years ago, and I find that truth and veracity are so much a part of me now I could not depart from it if I would.

The main element of a brick as I understand it is also the main part of a man. The main part of a brick is clay, well, we are told that the main part of a man is clay. He was made of the dust of the ground. If that is correct we must all be related more or less to a brick. In fact, it is sometimes said of a man that he is a brick. I do not know what it means, but I have heard the term used. I have also heard the term used otherwise about a certain fellow, "well, they say his name is mud." I do not understand that term either, but I think it dates back to the same forgotten history of the ancient craft of brickmaking.

If I were a member of this association I should insist upon the annual meetings being held henceforth and forevermore at Columbus. All in favor say "I," it is carried, and we will see you all next year. There are a gerat many reasons why that should be the case. In the first place, you will never find a better hotel in which to have a better banquet than you have had this evening. In the next place, you will never find a better city or more hospitable people than here in Columbus, and in the third place, now this may be something surprising to you, but I am giving it to you straight, and Dr. Chauncey will bear me out in it, this city of Columbus is recognized and admitted by all of us in authority as being the orginal Garden of Eden. (Laughter.) Why it is just as true as logic and there is no getting away from it, for logic is logic. Right here began the history of man. Man was made from the dust of the ground. Ohio leads in production of the finest clay products in the world. Its deposits of clay and of dust and of mud are all larger and better and finer than can be found any place else in the world. So, doesn't it follow that where this extra fine material is found is the place where man was first started in business. If any further proof of that is wanted, this is final and conclusive. Just look at all the good men who have come from Ohio. Because we have such good stuff here to make them out of.

By the way, I find a little tribute here. It was written the other day by a man who ought to have been at the head of the table of a meeting like this. In fact, he ought to sit at the head of the table on every occasion of this kind. You may want to send out and get him to finish these services after you have heard this. We were having rather a disagreeable spell of weather a few days ago, and in the paper there appeared this editorial under the head, "Mud, Man's Best Friend." That is a strange statement to make, but I want to read you this editorial:

Mud—Man's Best Friend.

It shall be printed just as it was written, this letter to the editor. It is too much of a classic to be edited or slashed with the traditional blue pencil—but the name of the writer shall be withheld lest the makers of literature wither with jealousy at the sentiment and verbiage. Hear ye, then:

"This is a disapproval of your editorial in Saturday's Dispatch against one of man's best friends—mud.

"Mud is the marriage union of mother earth and the largess of the clouds. The divorce brings dust, disease and death. Mud is found wherever civilization flourishes and men constantly develop. The hot Saharas and the polar wastes have no mud. Plenty of room, both places, but nobody goes to stay.

"Mud is nature's way of treasuring a supply of water and preventing overflow. If Columbus were barren of conditions which make mud we would spend half our time in the state house dome escaping floods and the balance fighting fire. From the health view, things are always bad enough in a big city in winter time. But how infinitely worse it would be if there were no mud to lock and hold the millions of disease germs that otherwise would chase our surviving relatives to the tombstone man.

"To be sure, George Washington cussed moderately when his stage stuck in the mud. But good comes out of that. It prevented the building up of a lot of bunk about his being a superman, and it gave him a good appetite and something to talk about after supper.

"Did you ever take a hunting or fishing pack over the rock and sand country of the North without longing for a sign of mud? Would you destroy the chief joy of boyhood's fleeting, barefoot days? Would you take mud pies from the lives of little girls? Would you banish mud and with it the robins, whose nests are the mingling of earth and sky?"

A little tribute in passing to the commodity which you people put up in nice little blocks at a cost of about 75c a thousand, and then sell to us for $20.00 a thousand f. o. b. cars. Although I remember about that brickyard down in Butler county, and of hearing them talk about the sweep and the gum, and the temperer, and the molder, and the off-bearers, and the horse, and the pugger, and all these things, I would not know any of them if they came walking into the door today. I did not know the genial executive of our proud city was any better acquainted with these terms than I am, but it would seem from the subject which has been assigned to the Mayor that he was quite well acquainted with some of these brick factories. By the way, I am reminded of another likeness between your business, or the main part of your business, and the next speaker. You know he is in politics and you know you hear a good deal in politics about mud slinging. When it gets past that stage they say, "He got hit with a brick," so you see how intimately that business is acquainted with the brick business.

We are glad our executive got out of the brickyard, graduated from the off-bearer and has come along to take up a work and do a work for which I am sure he is much better fitted than anything he ever tried his hand at in a brickyard. It is a very great pleasure for me to introduce to you the chief executive of this very proud city, the Honorable James J. Thomas, formerly of the brickyard. ((Applause.)

FROM BRICKYARD TO MAYORALTY.

Hon. James J. Thomas, Columbus, Ohio.

> "Self-reverence, self-knowledge, self-control;
> These three alone lead life to sovereign power."

Mr. Toastmaster, Ladies and Gentlemen·

Inasmuch as there are so many good speakers to follow me, and as I am supposed to appear in operetta given tonight by the colored people called "Snow White," it is almost necessary for me to get away immediately. I am mighty glad for the opportunity to be with you again; and, ladies, let me say to you, in Columbus the ladies vote and, believe me, they have all the men skinned forty ways when it comes to politics. It is true, I may say, I forgot to have Mr. Randall to tell me whether it was the first convention or the second one, but I think it was the first one, which I attended. But, gentlemen, after the convention concluded I had heard all the arguments, I decided it was no place for a young fellow to stay in a business where they talked about wet heads and didn't know how to plat their kilns, and I concluded that I would stay right here in Columbus. But I got out just in time before Mr. Randall and the rest of you got to making gold brick. Believe me, he told the truth—the toastmaster is one of the best gold brick artists that Columbus ever produced.

As I have said, I am mighty glad of the privilege of being with you and to know that you are getting along at this banquet with our 100 per cent. water without the usual headache. I am mighty sorry I cannot stay with you. I hope you will come to Columbus often. We will always be glad to welcome the brickmaker in this city of homes. We have a real place in our hearts for each and every one of you. Now I must leave you for this little operetta, where I wish you could all go, for, believe me, it will be the real thing. (Laughter and applause.)

Toastmaster Sater: I think I may be excused or pardoned for saying I had some very nice things to say about the next speaker. I was told that under no conditions was I to make reference to macadam or concrete, nor must there be any references made under any circumstances about politics. I had a very pretty speech prepared and actually committed should General Wood appear before you this evening, but I will never say anything back of a man that I would not say to him, and as the General is not here you people are going to miss perhaps one of the finest opportunities of hearing as wonderful a speech that has ever presented itself to you. And while there would not have been anything of partisan politics in it, there must have been more or less discussion of politics, and if General Wood's plan go awry hereafter he will have to exempt the tosamtsater on this occasion, because what I might have done for him this evening nobody will ever be able to understand but myself. General Wood is not here, but he has a representative. and Colonel Orton, who has done all any man could do to get General Wood here, will introduce the gentleman who is to speak for General Wood.

Colonel Edward Orton: I hold in my hand a telegram in which General Wood says he regrets extremely that he cannot possibly attend this meeting. He has tried to obtain for us the services of one of his trusted lieutenants, General Glenn, but General Glenn is also too far away to make it possible for him to get her for this occasion. He appreciates most deeply our efforts to have him here this evening, and regrets beyond expression that he cannot be with us. This afternoon we learned of the presence, or about to be presence, in our city of a man who cannot take General Wood's place in the sense of conveying to you a personal message of what General Wood might have said except to this degree. General Wood has, during the last few years in this country, done this country a very wonderful service, and one which most of you perhaps have no great knowledge or conception. The gentleman who is to speak to us is at present engaged in going over the country for an entirely different purpose, or rather for another different organization, and is adding his voice to the furthering of a cause which represents one of General Wood's policies. If we cannot have the General with us tonight it seems to us in bringing this speaker here and giving him an opportunity to say to you at least a part of the philosophy that General Wood lives we are doing the next best thing to introducing the General himself. It is a great pleasure and a great good fortune that I am able to present to you Dr. Edwin F. James of New York City, who will speak to you along the general lines suggested by this topic.

Dr. Edwin F. James, New York City, N. Y.

THE NATION'S WEAL.

Dr. James F. James, Chicago, Ill.

"A nation's right to speak, a nation's voice,
And own no power but of a nation's choice."

Mr. Toastmaster, Colonel Orton, Ladies and Gentlemen:—

When I was speaking to Mrs. Wood last week I was not aware I would again so soon be called upon to act as an understudy for her distinguished husband. It is a great responsibility, and especially before such an audience as this—men whose products have contributed directly to the foundation of so many American homes! As I was coming down this morning from Chicago, and passing Gary, I thought that few men among us have the fortune to see during their lifetime a great monument to themselves, and that however much we may think of the wonderful work of an industrial corporation in building up a big city on the shores of Lake Michigan we shall always hereafter remember Gary, Indiana, as the place where a great American handled a tremendously critical industrial situation with justice, and without fully knowing it himself made a permanent contribution to the "Nation's Weal."

There is a vast amount of unrest in this country, and many remedies are proposed for it. Some think the cure will come with the signing of the Peace Treaty. One says when our railways are restored to private ownership under the supervision of the Government, and another says when we have organized in this country tribunals to settle labor questions, one great cause of unrest will disappear. Another urges the deflation of our currency, and in general such legislation as will guarantee the rights of property and the freedom of the individual on a sound and democratic basis. All of these measures have undoubtedly much merit and would have a part in the alleviation of our situation.

However, they strike at the external, ignoring the personal element in the problem. We talk of improving the conditions of work, but not much of improving the worker, and there lies one great cause of industrial unrest. I know I am speaking straight from the heart as well as the mind of General Wood when I say that industrial unrest in this country will tend to disappear with increasing strength, intelligent, patriotic devotion and workmanlike skill on the part of the workers of our country.

What can universal military training—and, let me say, that is one plank in the platform on which General Wood stands—what can universal military training do for us to lessen industrial unrest? It can do much; it can make the country secure against external complications. What will it do to protect us from dangers within? In the first place, we shall have a better situation when each man is brought to that development of himself to which he has a perfect right, and, first of all, to physical health and vigor.

You will pardon me if I am a little personal in what I am about to say. I have just come out of two years of camp experience. I saw half a million recruits come into the cantonments in this country. I watched 500,000 of them at Brest marching down the winding road from Pontanezen to take the transport for home. Those two pictures live in my mind as showing what camp training does for young men. One morning my automobile was stopped on the road below the Esplanade by a long double line of khaki-clad figures; each man with the insignia of the Polar Bear on his left shoulder, showing that he had played his part in the strenuous North Russian campaign. It was evident that these men were stronger, happier and destined to be more useful when they returned to the peaceful pursuits in their own country. There is too little attention paid to the physical health of our youth. One man in four was ruled out of our camps as unfit for military training, owing to physical defects. What we could do to regenerate the race, if we could mobilize the youth of this country and put them even for a short time through such training as our young men had in the emergency of war it takes only a moment for any employer to see.

Every young man has a right to know something of our country. What was done in the camps to this end may interest you. The draft act showed 25 per cent. illiteracy among the young recruits. Each year in this country 50,000 young men reach the age of eighteen unable to speak our language; 100,000 cannot read or write the English language; another 100,000 do not with pleasure or profit to themselves. Statistics in the large cities show today only a fraction of 20 or 30 per cent. of native-born citizens of native-born ancestry. In that town of Indiana which I mentioned, out of 80,000 only 5 per cent. are native-born Americans. It is a tremendous problem which confronts us. In no other way can adult illiteracy be eliminated so quickly and readily and permanently as by universal military training, and the outcome of this will be a basis for better citizenship.

We talk much in this country of Americanization. It is a wonderful slogan under which to fight. Universal training is the most economical and effective means of attaining it. The Army Reorganization Bill calls for two months of intensive vernacular training for every young man of seventeen who is reckoned illiterate. I have seen in the army camps thousands of young men who in two months learned to speak our language and at the same time developed in patriotism as never before in their experience. We are trying to accomplish this all over the country in our schools and in our patriotic organizations, but nowhere else is patriotic emotion stimulated as in the camps. I saw this at San Diego, where 1,500 boys of our Navy gathered after sunset with the searchlight playing on the American flag, and sang the songs of our country with a depth of feeling such as I had never witnessed before. I saw the same thing from Kearny to Coblenz. I have walked along the Rhine and seen the boys swinging by with quickened step and a flushed cheek. I looked over the river to discover what had caused this emotion, and there I saw the Stars and Stripes floating above the embattled heights of Ehrenbreitstein.

Military training has developed and quickened emotion. It has also taught our young men what our country means, its ideals and the institutions which embody them. In Camp Lewis, on the Pacific Coast, we gathered 25,000 young recruits and gave them three weeks' of intensive training in courses on American history, politics and economics, and they gained more in three weeks than they would have learned on the average in three years of ordinary living. With a better comprehension of their country there came a recognition of their duties as future citizens. That was completed in a finer form by the democratic atmosphere of the camps, both on this side and abroad. I have seen them, soldiers, sailors and marines, gathered together in moments of leisure, and found them always talking about home; the man from Texas was telling the man from Maine, the man from Florida was telling the man from California, and out of all this there came a sense of solidarity and citizenship, of membership in one society such as never could have been acquired in any other way. That is something we need in this country; we need social solidarity, and those of us who lived through the months of military training have learned the spirit of those who came together in the camps. If presently all our young men catch the democratic spirit of training camps, then in the future employers, foremen and workers will know each other better, mutual doubt and suspicion will be lessened, and one great cause of industrial unrest will disappear.

Something more can be done in the brief time proposed by universal training, the making of the young men in this country into better workers. We have not done it well so far. One cause of industrial unrest is industrial ignorance. We have not given our boys a knowledge of our industrial organization; we have not given them any very effective teaching as how they may best choose their life work; we have not given them adequate training for the specific vocations they select. We found in the maintenance of a great national army that there were 576 distinct occupations necessary for the winning of the war. The army has enrolled today thousands of young men because it is offering to train each man in the period of his service in some useful occupation, and make him master of one vocation or another, so that when he comes out of the service he will be an efficient workman. Our industrial situation will be better when every young man is brought to be more intelligent, when he is brought to be a more patriotic and a more devoted citizen, sound and vigorous in physical health, a more efficient workman.

I know I have expressed very inadequately, ladies and gentlemen, the supreme opportunity which lies in universal training. Sometimes we question the cost. The leader of the Republicans in the House said the other day it would cost $1,000,000,000 a year in addition to the regular allowance of our regular army. The Senate Committee on Military Affairs, with the most complete data at hand, estimates $100,000,000 for the first year and thereafter year by year the increased cost as larger number come into training will be covered by a reduction of the regular army.

We are sometimes a little discouraged by hostile action here and there. We were somewhat startled that the Democratic members of the House voted against any action on military training at this session, and yet no one need be surprised that there is a natural hesitation in the minds of representatives from the South when any legislation is proposed that seems to touch the negro question. It is a tremendous problem, a problem that one section has to bear more than another, although in the beginning it was not responsible for the conditions which now confront us. I have talked much, however, with men of the South, members of chambers of commerce, distinguished leaders in industrial affairs, men foremost in education, and I think this Army Reorganization Bill reflects the attitude of these leaders toward universal military training. Universal training offers to the South the quickest and best solution of this most vital problem, and at national expense as is proper, because the negro problem is one of the country and not one of a section. This training will make the negro more intelligent; it will at the same time develop in him the habit of obedience and the recognition of authority; it will make him a more capable worker, because this training will be adapted to the specific needs of each part of the country. The training which will make the negro a more competent worker on the farm and in the shop, more industrious and, therefore, of much more worth to the economic life of the South, is training which will tend to solve one of the greatest problems that confronts the country.

So, Mr. Chairman, if I could say just one word in conclusion, it would be this: In universal military training we have the most economic, the most democratic and the most efficient means of military preparedness against all possible complications from without and the best means of overcoming the industrial and social unrest within.

You do not look just like missionaries, any of you, at least not of the old type, and yet I wish every one of you might go out from this room tonight determined to do all he can or she can to further the cause of universal training of young manhood, the mobilization of our youth year by year for better workmen, better citizens, greater intelligence and patriotism in our civil life, and more complete happiness within the home. (Long and continued applause.)

Toastmaster Sater: I am sure I am only saying what you all feel that in the unavoidable absence of General Wood we could not have had anyone who would have more fittingly represented him than Dr. James. I do not understand the next topic on the program at all. I did not know that there was any such thing as a competitor in the brick business any more. There used to be such a hypothetical man, but so far as my observation goes he, like the buffalo and several other animals, is in the discard. I do not know why or where he went, or anything about it, but he seems to have gone. If he has left any address behind him I am sure it could only be discovered and discussed by men whose profession could be rather spiritual than worldly, and for that reason, I suppose following the natural law of selection,, this subject was assigned to our good friend Dr. Chauncey. I am going to digress a little from the program here and read you a little parable which my lad handed me this evening just as I was leaving the house. He told me he had just cut it out of the Independent. I say this that you may understand just exactly the circumstances of the presentation of this contribution. He said, "Pop, you are going to the brickmakers' convention tonight?" I said "Yes." He said, "Here is something I just saw, but don't look at it until you get to the table." He didn't know I had been instructed to say nothing about concrete, but I am going to accommodate that lad, even though I disappoint Col. Orton and some of the rest of you. It says, "And God saw that it was all very good, but the adversary said it would have been better had you made the man of cement instead of clay." And God said, "I have had enough of plaster saints already and I want a man now who can mold himself." (Applause.)

Dr. Chauncey, I don't know whether you care to speak from this text or not, but if you do you have my permission. I have the pleasure to introduce Dr. C. F. Chauncey of the Trinity Episcopal Church of this city.

OUR COMPETITORS.

Rev. C. F. Chauncey, Columbus, Ohio.

"All the world is our playhouse,
The universe is a thought of God."

Mr. Toastmaster, Ladies and Gentlemen—I want to say at the outset that I am glad I am here, and I want you to appreciate in the beginning the difficulty I had in getting here. I don't think any of you can realize how much difficulty a short sentence can at times create to a man. In my case that short sentence reads: "Full evening dress is in order, but not essential." The difficulty was something like this, as it occurred to me: I got home hoping I would have some few minutes to prepare my speech for this evening, and thought I would look over this little program, and found as I looked over it, that was the sentiment that stuck out. I said to myself, "I wonder how my old dress suit of the vintage of 1870 looks." So I went up and looked at it and it seemed presentable, and then I thought I would look and see if I had a dress suit shirt. I had a recollection that I had worn two last week, and they had not come back from the wash. There were no dress suit shirts there. I called my good wife and said,' "What shall I do?" She said, "Telephone to Lazarus and order one." I did so, and I asked how much it would cost besides to send by special delivery. They said, "Twenty-five cents." I said, "All right, send it out, and get it here by 5 o'clock." And I went on with my speech. Perhaps you may not realize how much time I put on it. About 6 o'clock I realized I had not heard the doorbell ring, and when I investigated found the shirt had not been delivered, and something must be done. So I telephoned to Lazarus, but they had closed. I began to wonder what I could do, when I recalled I had a son at school fourteen years of age, and perhaps he had a dress suit shirt, and I want you to realize that although that son is not anything like as stout as I am, I have that shirt on. (Laughter.) I also hope that if I gesticulate wildly at any point and anything happens, you will overlook it.

I have been wondering just why I am here. I may answer that question for you by saying I am here because your very efficient secretary decreed that I should be here. But I want you to realize absolutely that I have no political ambitions. I am here simply to stand as a buffer. I would also like to say to you that although I am here, I know nothing about brick. The worthy toastmaster knows a good deal more about brick in one minute than I would know in a year, and inevitably I speak to you only about subjects I know something about.

It has pleased this toastmaster to say that there is no such thing as a competitor. I believe an effort to be clever was the trouble, but I also believe the limitations of his mind, and I want to prove to you this evening the limitations of his mind, and I can prove it by a little illustration, and I will give you my text and what I mean.

Before I came to this great city I lived in a little country town not far from New York City, and there was a man there who was the owner, the assistant and the proprietor of a store. It was the leading store in that community, and it handled about every kind of merchandise that any store could handle. There were other stores in the community that handled some of the things, but none that handled so wide a variety. I said to him one day, "Mr. Bailey, who is your competitor?" I was thinking of the other stores in that town and I was thinking of other stores in near-by towns. And this is the answer he gave me: "My only competitor is distance." I said: "That sounds strange to me." And he said: "Let me illustrate. The only competitor you have in your business is the distance between the pulpit and the pew." That, after all, is the only competitor I had. The only thing I had to conquer in any sense was distance. Distance, after all, is the problem that faces every organization, every human being.

I want to illustrate that. I suppose in this day and age of high cost of living one of the problems which interferes with the brick business is the amount that is charged for brick, and I suppose many of you no doubt have been considering in your minds how can I reduce the price of brick, because if the price went down the demand will increase? That may not be right, but it seems to me probable that you would want to make the price of brick go down. What is your competitor? It is distance—the distance that stands between you and the persons who buy your brick. If in some way you can get rid of some of these hands which handle the brick from your factory you can sell your brick at less cost, for every man who handles your brick adds to the cost. Your great competitor is distance.

Let me illustrate it in another way. If you want to sell brick—I do not say concrete, I do not say wood or anything of that kind—if you want to sell brick, and I don't know what it is, one of the elements in it that will enable you to sell it is quality. Just as soon as you begin to think about quality of brick the question comes, What may increase the quality of it? And then the answer comes, the distance that stands between your ideal and what your brick ought to be.

There are many things in life that will make you make brick that are not as good and perhaps a little cheaper, but let me drive it home to your minds, that the problem that will be presented to you is distance. Shall you add more distance between you and your ideal? And shall you dare to turn away from it, and what is your idea of the essential quality of the brick you are selling?

Another matter. In this day and age it is not simply you are going to sell brick, not a question as to the price of your brick, a question as to the quality of your brick, but a question of quantity. How are you going to produce in quantity? is a question that is being presented to you every day, and the answer to that is this: The difficulty with production today is not the difficulty that pertains to capital, not the difficulty that pertains to labor, but the distance that exists between two elements of production, and more and more these two elements of production, capital and labor can be brought together if the competitor, distance, can be overcome.

The new age will come, and it is the fundamental problem which faces us today. If we want a greater production it means the drawing together of these two elements in society. I want just to give you a little illustration of your competitor, and I would like when you get back home, every one of you, to think that the real competitor that faces every man, no matter what his business. It faces him in the moral life. The distance that may exist between what he is and what he ought to be. The distance that exists between him and his God. All the progress in the world is nothing more than the eradication of distance, and when you have eradicated distance you have realized progress. (Applause.)

Toastmaster Sater: I say nothing new to you when I announce that there are forty-eight states in this country, over each of which at all times there presides a governor, and I suppose if you were as honest with me in answering the question I am about to put to you as I have been in making this announcement to you, if I were to ask you tonight how many of these forty-eight men you could name, the returns would be very, very disappointing. Since the time when William Henry Harrison became the first governor of the northwest territory, of which Ohio was the first state to be formed therefrom, the governors of Ohio, without exception, have been unusual men. Their names have gone way beyond the boundaries of their own state and are known to the length and breadth of the land. Calling a roll of these men would be like reading chapters of history from the days of Harrison, St. Clair and Tiffany. I doubt not that you would bear with me if I should attempt to read therefrom. But I would like to go back just a few years and refer to just a few of these men, that you may refresh yourselves as to the stature and strength of these representatives. I would call before your view the eloquence of Tom Carlin, the commanding utterances of S. P. Chase; the judgment and resolution of David Todd, the great war governor of the sixties. I bring before you the virile qualities of old William Allen. The constructive statesmanship of Rutherford B. Hayes. Do you remember George Hoadley, the great jurist, and Foraker, fiery, fearless and audacious Foraker? You remember the placid and kindly soldier and statesman, William McKinley. And there is our good old friend Campbell, whose democratic simplicity and dignity and charm of personality makes him today one of the most envied men in Ohio, and in the whole country. Revered by all whose privilege it is to know him. Harmon, the great man of vision and executive ability, and finally we come down to the modest and progressive Americanism of James M. Cox, the present governor. (Applause.)

Isn't that an interesting composite picture for you? In addition to the names I have mentioned there are others; we have had forty-four governors in all, twenty of whom were elected for one term, sixteen of whom were elected twice, two of whom reached the high position by succession; two of that number have been elected three times, one being Rutherford B. Hayes and the other James M. Cox. That is the confidence that the people of this state have shown for their fellow citizens, for these two distinguished sons. We are proud of Ohio, as you probably would infer. It would be unpardonable if we were not, for what I said to you in the beginning is true. We are proud of what Ohio has done to make this country great and worth fighting for. I want to say to you people that no state in the Union acquitted itself more proudly than the State of Ohio during the late great crisis through which we passed, and to no one is the credit for that performance quite so great as that which belongs to our governor. Under his direction every resource of this state was mobilized and marshalled and ready to lend aid to the government. We are proud of that record. We are proud of the man who led us in that work. I wish I had not been barred from politics, but if the good people of Ohio and the good people of this country wish to try the same experiment that they did a few years ago with the only man that had ever served Ohio three times as governor I give you my word they will never regret it. I have the very great honor to introduce to you, ladies and gentlemen, Governor James M. Cox. (Applause.)

THE FRUIT OF STRIFE.

Hon. James M. Cox, Columbus, Ohio.

"Man is made great or little by his own will."

Mr. Toastmaster, and Members and Guests of the National Brick Manufacturers' Association:

You may wonder why I am not overwhelmed with confusion and wearing the blush of embarrassment. Ohioans have a way, just as they are about to retire their governors to the serenity of private life, of painting a picture of the things that are not to be. We are used to it here and I am compelled to make that statement lest you may suspect I am without normal modesty.

When I came into your presence this evening I was very much plagued, as I was a long while ago in the first campaign I made for Congress in Butler County. I was asked to address a regimental reunion. Being younger then than now and more sophomoric, I was preparing to utter a word picture of the storming of Lookout Mountain, and of making a great resistance at Missionary Ridge, when on looking up the history of the regiment I found it had never got outside of the State of Ohio.

I was wondering what I might say tonight that was new to you men and women. I was wondering what thought might be appropriate. I know all the multitudinous compliments that have been paid you during this convention and I was quite at a loss to know what simple tribute I might pay your art, but the very versatile toastmaster has saved me from embarrassment. He has told you that as a result of looking day after day upon the wheel and steady tread of the operations of the old brickyard that he took an oath to live a decent life. I compliment you, gentlemen, therefore, of being members of a profession which directly or otherwise was the means of reforming an Ohio lawyer. (Laughter.)

I did not know what I was to talk about until I arrived and saw here on the program the sentiment to which I was expected to respond, "The Fruit of Strife." I wonder from what thought came this arrangement. We Ohioans are a peaceful people, very much like the old Quaker in Philadelphia at the beginning of the late war. He had a war of words with a German sympathizer and in the altercation that ensued the German sympathizer slapped the Quaker on the cheek, and the Quaker turned the other cheek and received a second slap, and then he said: "I have permitted thee to slap me on both cheeks; I have complied with the biblical injunction." Meanwhile he was pulling off his coat and hat. "And now I intend to give thee a damned good licking." And he did. (Laughter.) So we, as the Quakers of Philadelphia, are peaceful.

I am here to speak the welcome that is in the hearts of the 5,000,000 of people making up our commonwealth, the welcome that we love to extend to everyone who comes within our borders. It has been our statement—and as you have observed from the performance of the toastmaster—we are a modest people. We reflect upon it, but rarely talk about it, that most people who had anything to do with charting their own destiny were born in Ohio, and those who were not born here at some time or another come here. I bid you welcome and assure you that our hospitality is earnest and whole-hearted.

There is much of strife in the world today. There is much of confusion and disputation in the human affairs of this great republic, and yet we must not be discouraged because of it. We live in a democracy where public opinion and the natural result of public discussion abound, though at times it may take on the elements of petty criticism. We may be disposed for a time to forget the philosophy that brings us a measure of human happiness, or more or less the human attitude that brings it. When a full-grown preacher can slip into and be comfortable in a fourteen-year-old lad's shirt even after eating all the chicken and things which accompanied it, then it seems to me that the average man or woman ought to be able to develop that attitude of mind which will enable him or her to look on tomorrow with optimism rather than pessimism.

Speaking of preachers (and I yield to no one in my reverence for that great calling, the church is as necessary to society as government, and we have never appreciated its great influence as we do now), I am reminded of the story of an Indiana preacher who was a very attractive young fellow. He delighted in public speech, and he adopted the ministry as his profession, but in the language of the street, at one time or another he had been a "regular fellow," and in a moment of weakness in the days when things were not as dry as they are now, he fell from grace, and of course everyone knew it before the sun went down. He had the good sense to pack up and go away. He went into the southern part of the State and worked on a farm. After a time, hearing of a vacancy in a country church, he made application and was invited by the elders to come and make a few simple remarks. They were delivered and the audience was charmed, but the elder demanded a reference from the charge which last employed the young minister. He was nonplussed for a while, but finally he recalled that one of the deacons had occasionally taken a drink with him, so he gave his name as a reference, and correspondence started.

A letter of inquiry was written to the old deacon in the northern part of the State, who replied, "Reverend So and So is a proven scholar, possesses a charming personality, has been a powerful member of the community, is a fine Christian in every way," and signed his name. Then he added this postscript: "I neglected to say he has a very bad temper when drunk." (Laughter.)

Now, if any one had said five years ago that we were going to have a great war, that America would be drawn into it and that we would train and equip millions of soldiers and send them overseas, that the military despotism of Germany would be destroyed and at the end of this great achievement the affairs of the earth would be more confused and chaotic than they had been before the war, he would have been laughed at. Yet I think we can all find agreement in the statement that things are much confused now, but the answer is found in the thought expressed a moment ago that in this country at least we live under a democracy in government. Direction of our affairs is not given to us by king, or queen, or potentate. The policies of our government are the natural outgrowth of public opinion, and public opinion is the natural product of public discussion. We may at times be more or less handicapped because of the type and character of partisanship as it is developed.

I think that we will all agree that if the Lord's prayer as an original document originated on one side of the House as a Democratic sentiment it would be opposed on the other. If, on the other hand, the Golden Rule had originated on the Republican side, it would be opposed by the other side.

Nevertheless I have the faith that things will come out all right.

The people of this country must first, all of them, go to work, and those who are responsible must continue creation and production. The restriction of production must be characterized as producing a form and type of savagery, nothing more and nothing less, and the sooner we have an understanding on that point the better.

Governor James M. Cox.

The high cost of living will be affected favorably to us all as the government expense is reduced. We may just as well understand that we are going to have more or less of an inflation so long as the government debt remains large. The debt was increased as a result of our response to the call of civilization, but I am persuaded, after having served in Congress on the great committee on appropriation, that the government is running as nearly as possible as a successful business is conducted. In a very short time the exorbitant taxes can be abandoned, sufficient revenue will be derived from the ordinary methods of taxation, including the income tax and the inheritance tax, and I am not so sure but the inheritance tax should be abolished by the Federal Government. Only the State, in my judgment, ought to invoke, except in great times of emergency, this form of taxation.

If a business man took hold of a great business and found that its operating expenses had been multiplied as a result of special exigencies and emergencies, that man of business, just as soon as the crisis had passed, would probably make up the budget or pay roll and go back to the normal day. If the budget system were adopted in this country, as adopted in some states—Ohio, for instance—the government ought to begin with the pay roll as it was before the war, the expense as it was before the war, and permit no dollar to be added except upon full confidence and information that would abundantly justify it. Then I believe we would be approaching a normal basis.

Now, I assume as a part of the text to which I have been assigned, something should be said about industrial strife. We have had some annoying experiences in this state, particularly in the last six or eight months, and there were manifestations which in many respects were most adequate. My experience, if you will permit the expression of a personal experience, tells me there are two things at least necessary to reduce the chances of industrial strife to a minimum, and the first is to recognize that workmen are not machinery, but are a part of humanity. A second thing most necessary to impress upon the tens and hundreds of thousands of aliens that come to this land (in many instances brought as a deliberate industrial design) that this is America; that our ideals are not the mere passing fancy of today, but that they were given to us by our fathers; that they have been sufficient to carry us through the storms of time, and that now aliens cannot conflict with our laws and traditions and prescribe their own individual rules of conduct. We want them to know that this is a country of one and only one flag. And we mean to make it a country of one language. (Applause.) In industrial strife but one conversation can live if public opinion so rules.

Public opinion has ruled this republic since it began; it does now and always will so long as our institutions endure. But in Ohio at least we find persons by tens of thousands not influenced by public opinion because they do not speak our language, they do not read our papers, they know not what we talk about, they do not understand as to how we view their performances. Mischievous, dangerous, murderous, men of revolutionary tendencies make their way among these foreigners preaching to them the gospel that the men who own the industries should yield them and all they made therefrom to the working people who helped them to achieve; that it is theirs by right, and that if they continue to strike a social revolution is here, and the property will be divided.

I know you are probably perplexed with the thought as to what industrial conditions are coming to.

We have two very radical movements. Bolshevism is one, and yet another movement equally as dangerous, as I see it, is the radicalism of reaction. One radical movement says we will not wait for things to work out, we will destroy the institutions of government. That is the philosophy which prompts a man to tear up his potato vines in order to kill his potato bugs. The reactionary radical says we will make no change.

The American people must subscribe to the doctrine of evolution, making the government a government of and for the people in fact as well as in name, or prepare to merit a revolution.

If we keep the fires of evolution burning we will never have revolution in this country.

In recent years in this state we had the judges denounced from every street corner. The courts had fallen from the confidence of the people because our old constitution was made in stage coach days, and there was great industrial injustice growing out of the extension of industrial life.

The charter was changed, the laws were changed and amended, and the recall of the judiciary has not been mentioned in this state in the last ten years. Evolution therefore was the remedy for revolution.

We insist here that the supremacy of the law must be maintained at all hazards; that the local authorities must in the first place be required to exert their utmost. We found it was necessary to remove only one mayor in Ohio to impress diligence. It was unnecessary to apply the remedy more than that. We never fired a shot, and we never sent a soldier to any industrial plant when recent strikes were prevalent. Our shops went to work and the majesty of the law was maintained. Now there is a difference of opinion as to how far government ought to go in maintaining order. We had requests to send troops to a number of communities. I said to the gentleman making the requests, "If we give you the soldiers to open your factories and escort your men into the plant and out of the plant, then the military arm of the government at once becomes the tool of one of the parties in controversy. Above all things the confidence of the masses must be kept in the fairness of the government. But you open your factories on Monday, tell every man who wants to go to work that if any one, alien or otherwise, lays his hands on him he is violating the law, and the government will take cognizance, and local authority will be armed to enforce that law, and if that failed to do it then every soldier in this state will be on the job." The shops opened and work resumed. Workmen knew they could not be terrorized by the threats of aliens.

I do not speak unkindly of the aliens. We are all the descendants of aliens. The original American was the mound builder, and then came the Indian. I presume not a drop of Indian blood flows in the veins of any one present. Our forebears, every one of them, came from overseas.

Americanism is not a question of race. We care not what blood is in a man's veins. We want to know he is loyal to the flag and helps us in maintaining the institutions. The work of Americanization must go on, and these men who come among us must be taught the English language.

Many of them, uneducated and ignorant, are brought to this country by the ship load and are run into the mine or mill or factory. Why? Because they were content to live in squalid quarters. They were not Americanized because their Americanization would have inculcated better ideals, with demand for better working conditions. Some captains of industry who have had trouble have simply gathered the sheaves of harvest for which they themselves sowed the seed.

In the city in Indiana to which Dr. James has referred one of the difficulties has been this. In that state (and I speak not disparagingly of that great commonwealth) men who have not become citizens of America are privileged to vote. This is done also in four other states, which means that the balance of power is fixed as a result of this fact in determining the policies of this republic. There is danger in continuing a thing like this. The right of the ballot is a great privilege of citizenship, and no man should be permitted to enter the ballot box, and voice his inclination to help in determining the policies of this republic, until he has sworn fealty to the flag of our fathers.

The Americanization that is going on daily will work out these things. We will see the rainbow just over the horizon one of these days. The Lord increases our responsibilities just in proportion as he gives to us the blessings from on high.

It is a compliment to this generation that it has been selected to help in working out the reconstruction and the upbuilding of the civilization of the world, and all we have to do is to remain true to our principles. Then the opportunity to serve humanity everywhere will be continued to America. (Prolonged applause.)

Toastmaster Sater: Do you wonder now that I said we were proud of the contribution of Butler county to our state and this country? Governor Cox has certainly brought home to us a lesson that has found expression, I think, in one of the late articles by Dr. Van Dyke. He tells that in some far-off day in the kingdom of Ruratania there was a beautiful river which flowed through the center of that little kingdom. The waters of this river were the purest and the sweetest of all the country. The river was a source of delight to the people of that kingdom and capital. A stranger who visited the city remarked about the beauties of that stream, and how it was that the water was kept so pure and sweet and the beauty of the whole thing kept so complete, and after wondering much about that marvel one of the old fathers of the capital took the visitor to one side and told him this story. He said when that city was founded the good spirit that waited upon its founding told them of this river and where the city should be located, and the spirit said: "If you will build the city there it will be the fairest in all the land, and its fame shall be wider than the kingdom, but in order to keep the waters of this river pure and sweet and wholesome, every year every citizen must carry from the river a pitcher of water to the source of the river above the city and pour it into the stream," and they did that for generation after generation, and the city flourished wonderfully, but the people grew thoughtless and selfish, and they forgot the warning of the spirit, and they did not take their pitchers and fill them with water to carry back to the source, and after a while the river began to flow less freely, and it dried up and disappeared, and the people of the city likewise began to fail and disappear, and the people wondered how it came about. One of these same old fathers who had been spared called the people together about him and told him how they had neglected their part, what their indifference had cost them, that they had failed to do the very thing that had made them great and prosperous among all the cities and kingdoms of the world, and he said, "The only way you can bring back the prosperity and happiness you once knew is to fill your pitchers again, take them to the source of that stream and pour them in." They tried it and, to their great surprise and happiness, the river began to flow, and prosperity and happiness came again to the city in the kingdom of Ruratania. The simple meaning Dr. Van Dyke would have us learn is service. Service doing the thing we should do and doing it in the way it should be done every day. Unless we are willing to do these things, use the gifts God gives us, they may become like the tinkling cymbal and the sounding brass. I am a lawyer, not a preacher, and since Governor Cox has gone I may say I am not a candidate for any office. I have been thinking this over quite a little, and the more I think of it the more I am convinced that man is like a brick. That is the line I started on, and I am back to it again. The similitude and likeness is more apparent every time I think of it. To begin with, we are made of the same component parts, dust of the earth, and we are molded by outside influences; then we are put in the fire for the final test, and, just like brick, some of us don't come out in very good order, but the man who can come out of that fire of experience without his ideal being warped without being scarred, with every line straight and every corner square, and his color set, showing not only the elements that enter into his composition, but the manner in which they have been tempered; the man who can come out of this furnace of experience after he has been tested by fire finds a place for himself just as surely in the structure of life, just as the brick finds a place in the structures of good building. (Applause.) We have a good many men of this kind everywhere, not only in Ohio, but I want to say to you people I don't know of any man of my acquaintance that measures up to these requirements as the man does who is to complete this program, Colonel Edward Orton. (Applause.)

JUST A FINAL WORD.

Colonel Edward Orton, Jr., Columbus, Ohio.

> "To all, to each, a fair good night,
> And pleasing dreams and slumbers light."

Mr. Toastmaster, Ladies and Gentlemen:

I have been sitting here in fear and trembling while my friend Lowry Sater has delivered his last remarks. I had a sinking feeling in my heart that he was going to define the kind of a brick that I am. You know there are several kinds of brick. There are the face bricks. I certainly could not qualify in that class at all. Then there is the common brick, but I do not want to qualify in that class. I thought what he was going to point out was that I was a refractory brick. He let me off a little easier than I thought he would.

I am getting up here now in order to say just a few words to you on behalf of the local committee. I want to say we are happy that we invited you to come to Columbus. We are so happy about it that we want to renew the invitation. We do not deserve any credit at all for this—it is just pure selfishness on our part. We really have had such a good time entertaining you that we want to have it all over again. We are going to ask you to come and keep coming. We believe in this Association, we believe in its objects, which are educational—the education of the people who make the industry. I do not mean education in the formal sense of going to school and writing your exercises, but in that higher type of education which comes from the friction of man on man, and the rubbing of character on character year by year. We believe in the methods of this Association; methods which have proved themselves by thirty-five years of constant use, and which are, thank Heaven, getting more strongly fixed year by year. We believe in the spirit of the Association, the spirit of mutual helpfulness; that spirit of kindly good will which brings you back like a lodestone to whatever city is designated to receive you. We believe in the service of the Association; the service which has enabled all these crafts and industries to come here and receive their inspiration from their groups, do their technical work, and still come back here to pay their tribute annually to the live old organization which gave them their start. Because we believe in these things we have done our utmost to give you a good time. We have brought out the best we had. We have brought out our best Governor; we have brought out our best Mayor; we have brought out our best Preacher; we have brought out our best Toastmaster; we have brought out the best Stranger within our gates (pointing out Mr. James, who had taken General Woods' place on the program). (Applause.)

Mr. Randall refreshed my memory yesterday about an event which happened here in 1898, when the Association was meeting here for the first time. He said, "Ed, I remember well a story you told us then." I said, "You have the best of me, let's hear the story," and he told it. I know there are only a very few of you here who can go back that far, so I am safe in telling it again. The story was to this effect: In a certain rural community there was a husky colored boy who thought he could fight pretty well, and made himself rather a bore to every one in his community by bragging about it all the time. So some of his friends and acquaintances, and others not quite so friendly perhaps, proceeded to go outside and secure some real talent to take the conceit out of the local wonder. They brought him back to the town and quietly arranged a match. In the course of the engagement the unknown, just as the first round was about to close, pinked his man on his nose. Furthermore, it was a real good one. The colored boy retired to his corner nursing his nose and sponged up, and thought he would have better luck the second round. When the gong rang he jumped up and went at it again, and again, just as the round was closing, he received another "socdollager" right in the same place. He retired to his corner somewhat dazed. The third round was the same, and the process was repeated once more, and his nose now looked like a ripe tomato. He did not wait to go back to his corner that time, but he said, "Nigger, I wants you to know dat I'se game, but for Gawd's sake scatter yo' licks, man! Scatter yo' licks!" (Laughter and applause.) Now I have told this little yarn merely to illustrate my meaning by opposites. The committee wants the National Brick Manufacturers' Association to bunch its licks and hit Columbus just as often as it can. (Applause.)

President Hammond: This is about all. I do not know that I ought to say anything at all after all that has been said about language and patriotism, or piety, or lawyers, not to speak of the scientific expression. As members of the National Brick Manufacturers' Association we were invited to Columbus in a delightful way, and the invitation was accepted, knowing we would not come among strangers, but that we were coming to the house of our friends. We came to Columbus and were received with open arms and simple speech and clean hearts, and we are more than delighted. We have been treated to the best they had to give. They have done as much as any one could do from the prayer which started us off at the first session, that prayer that implored the seat of power and truth for its goodness and help on our convention to the kindly reception by the mayor at that first session. It was enough in all goodness to satisfy the most reverent, I should think, and then here is this banquet which Columbus has provided for us and has given us, and something else which you have not been told. Right there (pointing to Colonel Orton) sits the source of power of this organization, the scientist, the man who has groped and studied through the mysteries until he has evolved and conquered for us that which makes it possible for our business to be conducted much more easily, much more profitable, and we absolutely surrender, because the scientist has held his hand out and said this for you, and it was he who did it, and our secretary calls him "Ed." He admits it. You heard him say it. The National Brick Manufacturers' Association thanks you, Colonel Orton, as chairman of the executive committee. I thank you as the scientist who helps us to improve our work and insures us against the attack of anything which science can prevent coming upon us. Long may you live. I do not know that I can say anything more. We appreciate the manner in which the toastmaster has presided over this gathering. Can't we sing something which will say "We thank you?"

Led by Lieutenant McArthur, the audience rose and sang "Auld Lang Syne."

THE END

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.

BUILDING OPERATIONS in Evansville and many of the other towns in southern Indiana, southern Illinois and western Kentucky are picking up since the arrival of spring and indications point to a great deal more building done this year than last. Edward C. Kerth, city building inspector at Evansville, is of the opinion that March will break all previous records for this month in previous years. While building materials are still high, prospective builders have come to the conclusion that they are not going to be any cheaper, at least this year, and are planning to go ahead with their building programs. Work has started on the large three-story brick addition to the Wemyss Furniture Co., in Evansville, also the three-story brick addition of the Karges Furniture Co., and both additions are expected to be completed by the middle of the summer. Work is progressing nicely on the new factory of the Crown Chair Co. and this factory is expected to be ready for operation by the first of June and will give employment to a large number of men. Announcement was made a few days ago that work on the million dollar theater at the corner of Main and Sixth streets, Evansville, will start about the first of April. Chicago and Indianapolis capitalists are back of the company. The theater will be from five to seven stories high and a part of the building will be used as a hotel. The Scottish Rite Masons of Evansville have decided to build a three-story brick addition to their cathedral at the corner of Upper Second and Chestnut streets. This work will be started and finished this year.

To procure 600,000 brick for the construction of the Best Brick Company's new brick plant at the corner of the Illinois Central railroad and the Green River road, at Evansville, the old tenement houses of the Evansville cotton mill are being torn down. The brick is being hauled in wagons four miles across the city to the new plant. It is expected that the plant will be in operation some time in April, turning out about 40,000 machine wire-cut brick daily, according to Columbus Self, superintendent of construction. The machine room, 70 by 40 feet, three stories high, and the drying room, 140 by 45 feet are being constructed of Brazil hollow tile. Six gas kilns are under construction, with two more contemplated. Electric power will be used for machines and to operate the gas producer. The total cost of the plant will be about $100,000. Clarence Schultz, W. P. Woods and George Herman organized the Best Brick Co. last September.

A new working schedule was put into effect by the Standard Brick Manufacturing Co. at Evansville, on March 1. The machine crew now works nine hours a day and the brick setters and carloaders work eight hours a day. A substantial increase in pay has also been given to all the employes of the company.

The Cannelton Clay Products Co. at Cannelton, has filed a notice with the secretary of state at Indianapolis, that it has issued $20,000 in preferred stock.

John C. Andres, secretary and treasurer of the Standard Brick Manufacturing Co. at Evansville, said the other day that the company is doing a nice business now and that the indications point to a very busy season. The company is furnishing brick for several large contracts in Evansville and towns within a radius of 200 miles of that city.

Michael D. Helfrich, connected with two of the largest potteries at Evansville, has started the erection of a saw mill on the Ohio river in that city that will cost about $100,000 and which, it is said, will be one of the finest mills in the central west. Mr. Helfrich is interested in many interests in Evansville and surrounding country.

The Sebree Real Estate Co., at Sebree, Ky., a few miles south of Evansville, closed a deal a few days ago whereby the 240-acre farm of U. S. Bishop, near Sebree, was exchanged for the property of the Eastwood Brick and Tile Co., on the Green River road, two miles from Sebree. The brick and tile company was established about five years ago by Oscar Parker and Thomas Semple, the latter selling his interest in a short time to go into another line of business and since then Mr. Parker has been the sole owner of the property. The brick and tile company was valued at over $20,000.

Plans have been drawn for a new high school building at Cannelton that will cost in the neighborhood of $25,000. The structure will be built with brick. Work has started on the new Claremont grade school at Evansville, that will cost about $150,000. Brick is being used in the construction of this school building.

W. B. CARLETON,

DIRECTORY FOR BUYERS AND SELLERS.

The 28th annual edition of "Hendricks' Commercial Register of the United States for Buyers and Sellers" for 1920 has just been published, after being delayed for two months by the strike of the printers in New York. It is published by the S. E. Hendricks Company of New York at $12.50. The new edition contains several improvements, the most noticeable being the new method of exterior indexing by coloring the front edge red, white and blue to indicate the different main sections of the book.

First is blue, on which is stamped the words "Trades Index." This is a section of 162 pages, in which every product listed in the book is indexed and cross-indexed for ready reference. The red section is the main classified trades list. It contains 1,813 pages, listing over 18,000 different products. In the present edition we find over 1,200 new headings, including many headings completely covering the chemical industry. The third section of the book, as indicated by the white edges, contains 216 pages, listing the trade names under which products are manufactured, with the name and address of the manufacturer. The second blue section is the alphabetical section of 487 pages, containing all the names in the book in one alphabetical list, with addresses and their main line of business. This is followed by the index to advertisers of 20 pages, containing a full list of branch and foreign offices following each name. The whole book making a volume of 2,703 pages.

It is an excellent work, a copy of which should be in every sales and purchasing department. For the former it contains complete lists of all prospective customers and for the latter it shows at a glance the producers of any product which may be required. The list of trade headings covers from the raw material to the finished article all products connected with the electrical, engineering, hardware, iron, mechanical, mill mining, quarrying, chemical, railroad, steel, architectural, contracting and kindred industries, and the firms listed cover producers, manufacturers, dealers and consumers.

"Hendricks' Commercial Register" has been published annually by the S. E. Hendricks Company, Inc., exclusively for 28 years and contains the best list of brick manufacturers obtainable. The publication of this important reference book, involving a tremendous amount of detail work in compilation and annual revision, places before purchasing agents and sales managers a fund of valuable information not heretofore available.

Producer gas is one kind of hot air that seems to be doing good service.

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.

THE SITUATION in the building program of this territory has resolved itself into a question of the supply of labor and material, which means that the clay products manufacturers of Wisconsin and the states adjoining which supply the demand of local contractors, will have no trouble in disposing of their capacity production. In reference to the building outlook it can be said that there is plenty of demand and an abundance of cash. Prospective builders are so imperative in their demands that they are willing to pay practically any price that is found necessary to secure the building. This refers particularly to industrial construction where buildings have been made necessary by business expansion and the lack of these buildings holding down production. As to home building, there is a great need for dwelling and flat buildings, but in this case the high cost of labor and material enters into the situation. It is largely an investor's proposition, who feel that this is not the most opportune time to build.

Much of the building is being arranged for on the cost-plus plan, as that is the only basis on which contractors can safely figure, as a rule. But when a contract is entered into, there is no certainty as to when it can be completed, for material is almost impossible to obtain. Labor is little better, and skilled labor is at a premium. Material prices are going up and very likely will continue to rise. What labor will do is problematic, as the men will probably not fail to demand more pay progressively as the building season opens up.

Building operations in Milwaukee are proceeding at an unusual rate, forecasting great construction operations for the spring and summer season. According to the report of Building Inspector W. D. Harper, 1,282 permits representing expenditures of $1,146,081, were issued by his department during February. The figures for the corresponding period last year were only 722 permits, valued at $428,469.

In spite of the exceptionally bright prospects in building lines this year, there is one cloud on the horizon that might seriously affect the future activities. Because of almost prohibitive costs of labor and materials, Milwaukee and other Wisconsin cities are threatened with a partial cessation of building at the completion of existing contracts. Although there has been no indication of a stoppage of construction work on any large projects under way in Milwaukee, a large number of building projects have been postponed until labor and material conditions improve. Owing to the scarcity and high price of materials the General Motors Company has suspended its building program so far as housing for employes is concerned. This concern is constructing a $7,000,000 tractor plant at Janesville, but as yet has announced no intentions of holding up the building program on that project.

Masons, plasterers and bricklayers of the Fox river valley will demand $1.25 an hour for their work in spite of the agreement recently made, at which $1 was fixed as the wage scale. This scale will be effective in Appleton, Kaukauna, Green Bay, Neenah, Menasha and Oshkosh. At Fon du Lac the $1 scale prevails as the minimum. With such conditions existing and similar ones arising throughout the territory, it would seem that someone is trying to kill the goose that laid the golden eggs. Just how much traffic can be borne by the investor will determine largely how long these conditions can go on.

Brick yards in the vicinity of Green Bay will do a record business, according to the reports from material men in that section of Wisconsin. The brick manufactured locally will be used on many large building projects and will be shipped out in large quantities. Building material men are very well satisfied with the quality of brick produced in this vicinity, but complain that the yards are not equipped for winter operation. This allows only a limited output and during the present shortage of building materials, cuts down on the available finished project. The principal plants in this vicinity are located on the Fox river between Green Bay and Wrightstown.

The Vesper Clay Products Company, at Vesper, Wis., has been quite active in moving brick and tile of late. The company had the yards and the kilns full when the plant was closed down with the advent of winter weather and has been shipping its products throughout the winter. With the resumption of construction work in this section shortly the supply will soon be exhausted.

The Menomonie Brick Company, which has been closed down for some time past, will resume operations shortly. New interests have assumed control of the industry, which is located near Marinette, Wis., and plans are being made to operate the plant to capacity. Fred M. Prescott, formerly of Milwaukee, and E. P. Smith are the men actively interested in the business.

C. C. Stadler, formerly of Chicago, who purchased the former Peter Schlaf brickyard at Two Rivers, Wis., last fall, has purchased tile manufacturing machinery to add to the equipment of the plant. The entire equipment is also being modernized. Mr. Stadler is an advocate of oil burning kilns and is so equipping his plant for better and quicker results. The clay deposits comprise 57 acres of land and analysis has shown the clay to be of exceptional quality for the manufacture of brick and tile. Mr. Stadler is a man of experience in the business and is bound to make a big success of the venture. He attended the recent convention of the Wisconsin Clay Manufacturers' Association in Milwaukee and made a very favorable impression.

Another new clay industry which will make its initial bow to the consuming public this season is the Kewaunee Clay Products Co., of Kewaunee, Wis. The plant of the new company is located on the old State Brick Company site on the River road. It is practically completed and will begin production shortly. It was originally intended to have the plant in active operation by this time, but unavoidable delays prevented. At the first annual meeting of the company, held recently, it was voted to increase the capital stock from $15,000 to $50,000. The concern has opened downtown offices on Harrison street. C. Schmiers is president and the other directors are M. J. Rice, R. J. McMahon, August W. Kuehl, Clarence Redding and Frank Nepil. The concern has secured W. J. Benner, of Chicago, as superintendent of the plant, to take the place of C. O. Wilson, who recently disposed of his interests and removed from the city. With one kiln completed and three others under construction, the Kewaunee company hopes to soon be able to fill orders for brick and tile which are being received daily.

The Milwaukee Pottery Company, Milwaukee, has filed an amendment to its articles of incorporation, increasing the capital stock from $25,000 to $75,000. The plant is located at Seventieth Avenue and Hicks Street.

A. BADGER.

THE PER CAPITA FIRE LOSS.

According to a publication of the National Board of Fire Underwriters the per capita fire loss in the United States during 1918 was $2.68 as compared to $2.21 in 1917. Among the different states it varies from a total of $7.95 in New Jersey to $1.01 in Colorado. This is perhaps the heaviest per capita fire loss ever recorded, and it should serve as a reminder for greater efforts at fire prevention.

NOTES FROM TIDEWATER, VA.

A STATE charter has been issued to The Panther Gap Company, Inc., Staunton, Va.; maximum $300,000, minimum $50,000. John B. Catlett, president; R. S. Blakemore, secretary, and R. L. Stricklen, all of Staunton, Va. To deal in real estate, live stock, to operate saw mills, quarries, and to manufacture brick.

Mr. A. V. Sturgeon has resigned as general manager of the Nansemond Brick Corporation; plant located at Rieds Ferry, Va., near Suffolk.

Adams Bros. & Paynes Company, who recently bought the Louis Larson plant near Suffolk, Va., have installed a steam shovel in their clay bank.

The following has just been received from Tarboro, N. C.:

"Tarboro, N. C., March 18.—F. G. Davis of Tarboro and A. V. Sturgeon of Suffolk will leave here Thursday for La Crosse, Wis., for the purpose of looking after the shipping of a three-machine brick plant which they have purchased there. Mr. Davis has stated that if Tarboro wants the plant it will be installed here, but if they do not it will go to Suffolk, Va. There does not seem to be any doubt that the plant will come to Tarboro."

The Chamberlain Hotel, at Old Point Comfort, was completely destroyed by fire on Sunday afternoon, March 7. The N. B. M. A. convention was held in this hotel a number of years ago. The first story was built of brick and the balance of frame, which caused the fire to spread so rapidly that many guests barely escaped with their lives. The loss is placed at $2,000,000, with $350,000 insurance. Contrast.—The Monticello Hotel, at Norfolk, Va., was completely gutted by fire two years ago and the walls left in perfect condition. It was six stories high and the same walls were used after the fire and two additional stories added, making it ten stories. Today you would not know it had been burned out, as the walls look just as good as the day it was built. This is certainly a strong point for building with brick. H. L. JACOBS.

REDUCED BURNING OF KILN FROM THIRTEEN DAYS TO SEVEN AND ONE-HALF DAYS' TIME.

The one detail in the manufacture of brick which is being given more thought and consideration just at present than anything else is the burning problem, and fortunate indeed is the brick man who has solved it to his satisfaction. Such, however, seems to be the case with I. A. Ryttenberg, president of the Sumter (S. C.) Brick Company, who some time since installed the Underwood system of burning. Previous to that time, with direct coal firing, it took them eleven to fourteen days to burn off a kiln, so they are quite enthusiastic over a kiln which they burned in February. The following letter received by the Manufacturers' Equipment Company of Dayton, Ohio, tells the story:

Sumter, S. C., February 27, 1920.

Manufacturers' Equipment Company, Dayton, Ohio:

Gentlemen—We are pleased to advise you that we have just finished burning a kiln of 250,000 with the Underwood system in record time.

One-half of the kiln was finished in 3½ days, balance in 4 days. As we used only the up-draft kiln, we consider this time very fine indeed. Yours very truly,

SUMTER BRICK WORKS,
I. A. RYTTENBERG, President.

Those who did not attend the big convention will do well to study thoroughly the interesting papers presented and the discussions following them. Many a man may find the answer to some of his problems therein, and every clayworker should find them worth reading.

NATIONAL FEDERATION CONSTRUCTION INDUSTRIES.

THERE GATHERED in Chicago Wednesday, March 24, nearly three hundred representatives of the various building industries of the Nation to attend the first annual convention of the National Federation of Construction Industries. The purposes of the Federation as outlined by the program are many and varied, chief among which is:

The co-ordination of the several divisions of the building industry.

To promote close co-operative relations between producers, manufacturers, distributors, contractors, architects, engineers, realtors, financiers and other construction interests.

To provide a united organization which will mobolize the entire strength and experience of the industry for educational and legislative work.

Ernest T. Trigg, of Philadelphia, is president of the Federation, which has its main office in the Drexel Building, Philadelphia; John C. Frazee is Executive Secretary, and will be pleased to communicate with any one desiring more detailed information as to the scope and purpose of the Federation, requisite of membership, etc.

Walter S. Dickey, of the Dickey Clay Mfg. Co., Kansas City, Mo., is vice-president and presided at the Wednesday afternoon session, when freight, traffic and other transportation problems were considered. One of the star performers, to use a street phrase, was Henry J. Allen, Governor of Kansas, who told in a most forceful manner of the measure that has been enacted by the legislature of that state for the prevention of strikes and the curing of labor troubles in general. The law is proving very efficacious and we commend it to our readers, who will do well to obtain a copy and study its provisions.

Another star performer was Dr. W. S. Stratton, director of the Bureau of Standards, Washington, D. C., who told in his modest but clever way of the work of the Bureau. There were several other able speakers. In fact, the program was all too long, but the proceedings were interesting and instructive from start to finish, and will be reproduced in part at least in subsequent issues of The Clay-Worker.

NO SHORTAGE OF BRICK FOR ST. PAUL.

While in some sections of the country the shortage of brick is and has been acute, builders in the vicinity of St. Paul, Minn., will be supplied with their normal requirements during the present building season, in the opinion of John H. Donohue, Jr., of the Corning-Donohue Brick Company, Ryan building, St. Paul.

The manufacturers and dealers in both face brick and common brick have prepared for the spring and early summer demands.

According to Mr. Donohue, new brick from large clay brick producers at Chaska will be on the market about May 1, and orders already booked will absorb only a fractional part of the season's run, Although the present outlook for building is for a heavy demand, the preparations that have been made will provide amply for all local projects.

Manufacturers and dealers in face brick are accumulating large stocks in their yards, and are now preparing to meet normal requirements.

Prices on both face brick and common brick have not experienced the same proportional advance as have other building materials.

THE CLAY-WORKER

Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

Title registered, contents copyrighted.

THIRTY-SEVENTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " "	10.00
Ten copies, " "	15.00

Foreign subscriptions 65 cents additional.

☞Subscribers when ordering a change of address should give both the old and new address.

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Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to

226 East Ohio St. T. A. RANDALL & CO. [Inc.], Indianapolis.

Vol. 73. MARCH 25, 1920. No. 4.

CURRENT COMMENT.

It's building time.

* * *

Let's make it the biggest year in brick.

* * *

The paving brick contingent also reports strenuous times.

* * *

Delivery time is at hand and motor trucks are helping to speed up the work.

* * *

The best way for most of us to help solve the problems of the day is to stay on the job.

* * *

The eight-hour day may get us more leisure, but it has failed to give us more production.

* * *

The tunnel kiln idea keeps boring further in and making more room for itself in the clayworking industry.

* * *

Much of the good work of the N. B. M. A. annual will continue to bear fruit through the year. Then we will do it again.

* * *

The man who does not believe there are commercial advantages in educational work is among the class of men who are hard to educate.

* * *

Surely no man can regret attending an N. B. M. A. convention. Those who are more likely to nurse regrets are the ones who stay away and miss some of the good things.

* * *

As a general proposition, shortening the time required for burning a kiln of ware speeds up production as well as saves fuel, and since often it is the kiln which is the pace setter in production there is now a special call for shortening the burning time.

* * *

When a man gets to feeling sorry for himself he is in a fair way of becoming a pessimist.

* * *

Honesty and fair dealing are among the old-fashioned things that are still good and useful.

* * *

There is a keen interest in the subject of kilns, with two hot spots of attention—better burning, and economy in fuel.

* * *

The five-inch item in drain tile has been leading the procession lately in a manner suggestive of a permament place in the front line.

* * *

We are wondering some what is to become of the old-fashioned fellows who used to find their principal delight in preaching against the Demon Rum.

* * *

Our own coal prices seem inordinately high, but here comes a report that the biggest pottery plant in Japan is now having to pay $17 a ton for coal which in 1914 cost only $4.

* * *

There is need for economy at the power plant as well as at kiln, and in either place the way to get economy is seldom by hiring cheap men. It is much better to get good men and pay them good wages.

* * *

Hesitating over the high cost of new machines is natural, but it is not always advisable. It is what service a machine will render that determines its value, and this is the thing to look into when considering the item of cost.

* * *

There are always two factors to consider in determining what is the best capacity for your plant. One is the capacity unit necessary for economy in manufacturing and the other is the quantity of output it would be practical to sell within territory to be reached.

* * *

When you come to think about it right it is not only practical to hitch scientific management with common horse sense, but it really takes both together to make the right kind of business. In the final analysis scientific management is nothing more or less than common horse sense handled systematically.

CURTAILMENT OF LABOR.

In a current report on building conditions in England we are told that, while in pre-war days it was not unusual for bricklayers to lay up to 1,600 brick as a day's task, today the task is nearer 300, and it is this curtailing of the task which is one of the serious problems of the day. It is a problem we have with us here. Perhaps not to such an extent as that, but it is with us just the same. And one of the questions of the day is how to overcome it and get real work out of the workers.

INTERIOR CLAY PRODUCTS.

Things are moving nicely now in the way of promoting clay products for structural purposes and the development of architectural beauty in exterior walls, and now the time is ripe to give a little larger share of attention to the subject of interior clay products. There are many possibilities for interior work in both brick and tile. There is the brick fireplace, which is coming into favor again. Then there is a field of possibilities in enameled brick and in tiling for interior walls. The interior wall problem has become one of much concern among architects and builders, and the situation is such as to make an opportune time for promoting a much more extensive use of enameled brick and wall tile for interior work. The subject is commended for study and experiment and active propaganda. There is a big field of possibilities for clay products for interior work, and right now the time seems very opportune for entering into active cultivation of this field.

RESEARCH WORK.

No man can review the development of the clayworking industry in this country during the last quarter of a century without appreciating the fact that research work has played an important part therein. Moreover, the good that has been accomplished by research work in the past should furnish all the argument necessary to insure the continuance of this good work in the future. In fact, there is more need for research work today in the clay industry than ever before, and the promise of returns are better. Research work, as Prof. Bleininger said at the convention, costs more now than it used to, but the extra cost should not be a cause for hesitancy. All branches of the clayworking industry profit both directly and indirectly from research work, and all should not only contribute to the forwarding of this work, but they should take an active personal interest in keeping it alive and producing.

CONSIDER THE WOMEN FOLKS.

The women folks not only take an interest in and enjoy playing a part in the conventions of clayworkers, but we should also consider the women folks when it comes to exploiting clay products for building purposes. The lumbermen of the country have long since recognized the important part the women play in determining house plans and selecting the materials for home building. The women as a factor have become more important of late years,and those preparing advertising and other publicity matter and also those seeking the trade direct should keep this in mind and consider the women folks as important factors in deciding the choice of building materials.

TEAM WORK AT THE CLAY PLANT.

A study of the paper prepared for the N. B. M. A. by Walter Colyer on "Common or Horse Sense in the Manufacture of Clay Products," reminds one among other things of the need for team work at the clay plant. In fact, he makes the point that the common sense clayworking plant is a thoroughly coordinated machine, with the least possible lost motion and with the best possible working conditions.

Plainly this involves team work or co-operation between the selling end, the management, the plant superintendent and the skilled men in charge of the operation of machines all the way from the power plant to the kiln.

The modern idea for obtaining the best order of team work here is that of having committee meetings as frequently as seems advisable, in which all the men in charge of work, as suggested here, are called together for a discussion of any and all problems of the day with the end in view of making conditions better all the time. Such an idea carried out in the right spirit should result in good and in the right order of team work. The idea should not be that of fault-finding and grumbling, however, or of showing up the other fellow as being in the wrong. The purpose of such gatherings should be for mutual assistance and benefit. If frequent conferences are held in this spirit better team work is bound to result.

PROMOTING A BRICK COMPANY.

There is before us a prospectus of the Nebraska Clay Products Company, Omaha, Neb., with a plant at Tekamah, describing the present property and plant of that concern,and outlining the intention to enlarge operations by a capitalization of a million and a half dollars and the sale of stock to finance the contemplated enlargements. Their plans are for the erection of a three-unit plant, each unit having a daily capacity of 125,000 brick. This new organization is the successor to and has taken over the Farmers' Clay Products Company, manufacturers of brick, hollow building tile, drain tile, etc., from shale, of which they claim to have an abundant supply.

AMERICAN DAY MAY 1ST.

The National Security League, with headquarters at 19 West 44th Street, New York City, has inaugurated the idea of American Day, the day selected being the first day of May, a day on which in bygone days agitators were wont to hold forth and stir up strife. Now this is to be made a day of public interest in and demonstrations of Americanism.

The idea is timely and fitting and there is nothing that can better be incorporated into the talks and activities of that day than some of the great ideas on Americanism as set forth by Col. Edward Orton in his speech on this subject at the N. B. M. A. annual convention at Columbus.

LOCAL CONFERENCES.

Getting acquainted and keeping in touch with the other people in your community is always a good thing. It helps in rounding out association work and advertising campaigns. Also it contributes to a better understanding of trade conditions than is possible if we all hold aloof from each other. At the present time of radical changes in conditions and uncertainty there is urgent need for the clayworkers in every locality to meet each other frequently in friendly conferences as an aid to a solution of the problems of the day.

WASTE PREVENTION AND UTILIZATION.

Thrift is the order of the day now in everything from energy to money, and in carrying out this order of thrift nothing plays a more important part than the prevention or the utilization of what has been waste.

Obviously the best way to save waste is to prevent it, and that is what is being done quite extensively in the clayworking industry. Efforts of both equipment men and clayworkers have been centered on reducing the percentage of waste, especially in burning wares, and these efforts have borne splendid fruits. The kiln burning of today as compared to that of a few years ago shows wonderful progress in waste prevention, especially in the burning of brick. There is still some progress to be made in burning various wares, and there are some plants where there is need for more attention to waste prevention in brickmaking. The more modern plants, however, now turn out remarkably good burns with but little waste, either in the form of bats, under-burns or over-burns.

We are finding also that burned clay waste has many uses, from that of a road ballast to its use as an aggregate in concrete work, and these help some.

It is found, for example. that waste from the brick kiln may be crushed and used as a road material and makes a splendid product. That of the harder burned may be used as a concrete material to mix with cement instead of stone or gravel, and lately there has been developed to quite an extent the idea of utilizing the waste kiln products in the making of flue linings and chimney caps.

Some of the waste pottery products and also of ornamental tiling are used to make a form of outside stucco coating finish to get a mottled effect in architecture, and here and there on all sides of us are being developed new ideas for the utilization of waste from burning and breakage of various kinds of clay products. We should follow these up, too, and keep posted on them, because there is often money to be made from the utilizing of waste products, and besides it is a strong element in true conservation which we are being impressed with now as an essential to the welfare of the human race.

ELECTION OF BURTON-TOWNSEND COMPANY OFFICERS.

At the annual meeting of The Burton-Townsend Company stockholders the following officers were elected for the ensuing year: Rufus C. Burton, chairman of board of directors; F. M. Sayre, president; L. K. Brown, vice-president; William H. Lucktenberg, vice-president and general manager; Leo W. Fleming, secretary and treasurer; C. S. Shrum, assistant secretary and treasurer.

The company's business will be greater this year than at any time in its history.

The Burton-Townsend Company has three plants—one at Ashtabula, Ohio, where they make rough texture face and common brick, and two plants at Zanesville, Ohio, where they manufacture paving block, common and rough texture building brick, hollow building tile and radial chimney block.

INDIANA TILE PLANT FINDS COAL UNLOADER SATISFACTORY.

A new aspirant for trade favors among The Clay-Worker advertisers is the Columbus Conveyor Company of Columbus, Ohio. So much attention is being paid to ways and means of meeting the present labor shortage that any labor-saving appliance is of unusual interest. The unloading of coal is quite a proposition on all clayworking plants, and the Columbus Conveyor Company's unloader is specially adapted to that work. In this connection, the following letter, though brief, will prove interesting reading:

Portland, Ind., January 20, 1920.

The Columbus Conveyor Company,
Columbus, Ohio.

Gentlemen:

The coal unloader we purchased from you has given us complete satisfaction. We find it is one of the best labor-saving devices we have around our plant.

Very respectfully,
PORTLAND DRAIN TILE CO.,
A. W. Bergman, Manager.

NORTH CAROLINA POTTERY WINS PRIZE AT CHICAGO EXHIBIT.

O. L. Bachelder, proprietor of the Omar Khayyam Pottery, of Candler, North Carolina, writes that he has recovered from the severe accident which occurred last fall, and which laid him up nearly all winter. Mr. Bachelder was awarded the Mr. and Mrs. Frank A. Logan medal and prize at the Chicago Art Institute exhibition last December, and in addition sold a lamp base and a vase for the permanent exhibit at the Museum. Mr. Bachelder's pottery is a small one, but as he puts it, "each piece is produced with loving care." Among the ware produced are porch vases, lawn vases, hanging baskets, vases specially designed for bungalows, bird baths and houses, all of unique design and finish.

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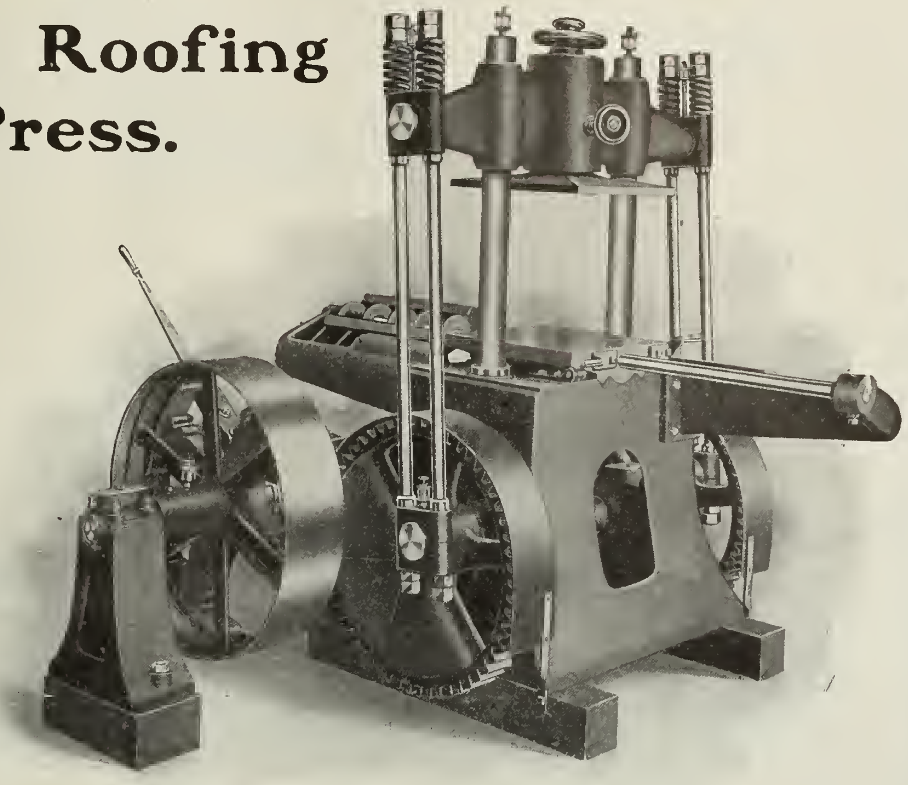
CRAWFORD-DUNLAP-EZELL CLAY
CO., McKENZIE, TENN.
Miners and Shippers Highest Quality
of Tennessee Ball and Sagger Clay.
Also, finest Brick and Tile Clay.
Prices and samples on request.

ILLINOIS CLAYWORKERS TO MEET AT CHICAGO.

THE ANNUAL CONVENTION of the Illinois Clay Manufacturers' Association will be held at Chicago April 20 and 21, 1920. An interesting program is in course of preparation. Any of the members having any suggestions to offer in that connection are requested to at once communicate with C. W. Parmelee, Secretary, Urbana, Ill. The present plan is to hold the first session the afternoon of Tuesday, April 20, to be followed by a dinner under the auspices of the Chicago section of the American Ceramic Society, a feature of which will be a number of addresses on pertinent themes. Those in attendance identified with other associations, such as drain tile, face brick, ceramics, etc., will hold sessions Wednesday morning, and there will be a joint luncheon at noon, with final sessions in the afternoon.

American Roofing Tile Press.

We build a complete line of Roofing Tile machinery including this splendid press. It is designed on advanced lines and is simple and efficient We will be pleased to send a full description of this and our other Roofing Tile machinery on request.



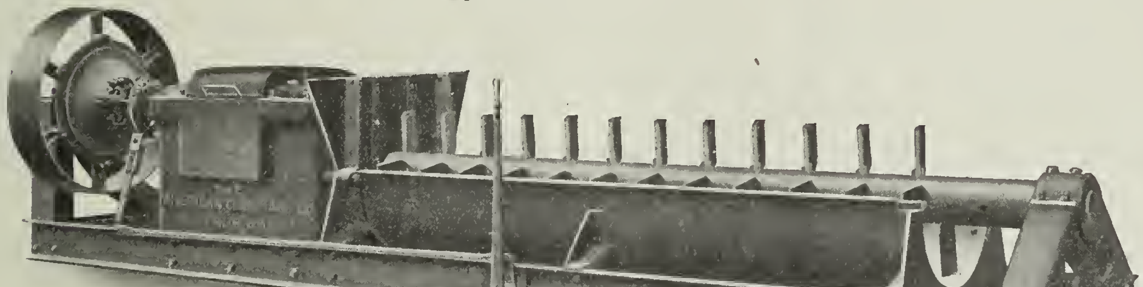
American No. 39 Roofing Tile Press.

American No. 291 Pug Mill.

There is no line of pug mills that will compete with this American Line. They have many superior points, all of which are enumerated in our Pug Mill circular. It's yours on request. These mills are mounted on steel "I" beams They are of rigid alignment construction. The power requirements are light. In capacity they are in a class by themselves. Get the circular.

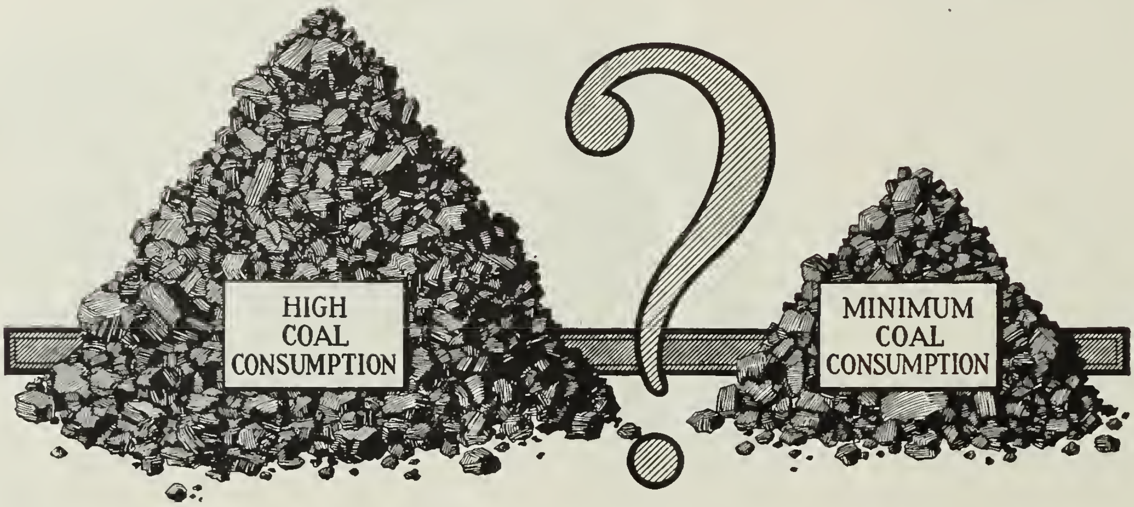
The American Clay Machinery Co.

Bucyrus, Ohio, U. S. A.



American No. 291 Pug Mill

WHY
WASTE
COAL?



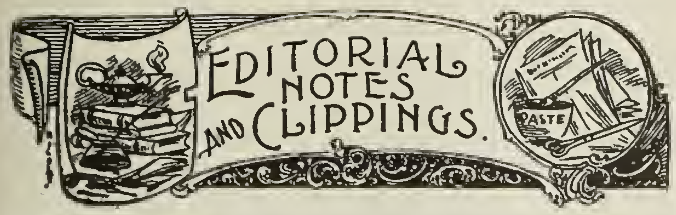
These are not the days for coal waste. If ever we conserve, it ought to be right now. With coal at the present high price and scarce at that, every effort should be made to SAVE COAL. Cars of coal are being confiscated to meet urgent demands. Why then should the clayworkers continue to use twice as much Coal as they need. In the interest of economy and bigger profits every clay products manufacturer should do his best to save coal. If coal were free it would still be a crime to waste it in the face of the great need for more coal. But when it is a matter of dollars in your pocket as well as public need, you should save.

There is no better way to save and profit than by using the Haigh Continuous Kiln for burning. It not only saves half your coal but half your labor. It makes a better product and stabilizes your daily production. The Haigh Kiln in connection with an American Waste Heat Dryer will make big extra profits at the present cost of coal and they will pay for their installation cost in a very short time.

Get our printed matter on these two modern plant necessities. Good for a small plant, fine for a big one.

The American Clay Machinery Co.
Bucyrus, Ohio

EDITORIAL NOTES AND CLIPPINGS.



The Paragon Brick Co., of Hopewell, Va., has moved its plant to Danville, Va., and will remodel same to 40,00 daily capacity.

R. F. Fleming, Jr., W. D. Franks and H. C. Fleming have organized the Laurens Brick Co., Laurens, S. C., with $15,000 capital stock.

The Forest Grove Clay Products Company, of Forest Grove, has been incorporated with a capital of $25,000 by J. B. Finningan, A. T. Lewis and others.

The Geijsbeek Engineering Co., announce the death of the senior member of their firm, Mr. Dirk Geijsbeek Molenaar on Thursday, March 11, at his home in Portland, Ore.

The Laramie Pressed Brick & Tile Co., with main office at Laramie, Wyo., has been incorporated with a capital stock of $50,000 by J. P. Markley, John Schroeder and others.

John M. McMaster, vice-president of the Welch-Brick Brick Company, Monanca, Pa., died at his home in Coraopolis, near Pittsburgh, February 26. He was 52 years old and leaves a widow and one daughter.

The Robinson Tile Company, of Akron, Ohio, has purchased the plant and holdings of the Clearfield Sewer Pipe Works at Clearfield, Pa. The plant will be overhauled and enlarged and operation started without any delay.

C. C. Porter, of Macon, Ga., has the plant of the Baldwin County Brick & Pattery Co., at Milledgeville, Ga., and is puting things in shape to manufacture brick in the very near future. He made a good start by sending in his subscription to The Clay-Worker.

The capital stock of the Okmulgee Brick Co., of Okmulgee, Okla., has been increased from $80,000 to $400,000, and all of the additional stock has been taken by the original stockholders. Work has begun on the plant, which will triple the output. Forty new houses for the employes of the company will be built near the plant.

The Moss-DeVoy Brick Company, of Memphis, Tenn., has been incorporated by John R. Collins, Louis J. Moss, Clarence DeVoy and William D. Kyser. The plant will be located near Hollywood, Tenn. L. J. Moss is president and Clarence DeVoy secretary and manager of the brick plant. The company plan to start with an initial capacity of 50,000 brick per day, and will increase the output as demand justifies.

D. W. Cox, well known brick manufacturer of Harrisburg, Pa., died February 14 of penumonia, just a week following the death of his wife. Mr. Cox was president of the Manchester Shale Brick Company and was also connected with a number of commercial interests of Harrisburg, notably the coal industry. He was 79 years old and had lived in Harrisburg since he was eleven years old. Mr. Cox was the author and publisher of Cox's Calculated Tonnage Rate Book, a work of great value in the coal industry. Two sons and a daughter survive.

The Birmingham Clay, Brick and Tile Company, just organized with a capitalization of $200,000, has purchased 25 acres of clay, shale and coal lands, on the Birmingham-Lewisburg road, four miles from Birmingham, on the Louisville & Nashville Railroad. Reports of geologists and engineers show that the property has more than 5,000,000 tons of high grade shale, 200,000 tons of coal and more than 1,000,000 tons of best clay. The industry will produce brick of all kinds, fire brick as well as common, hollow tile and other tile and other thnigs of a similar nature. Harry Watkins, president of the company, has had twenty years' experience in the hollow tile business. The plant will have 16 kilns with a monthly output of 4,000 tons of building tile per month, besides fire brick and other products.

The Evansdale Clay Products Company, of Morgantown, W. Va., has been organized with the following officers: Otto Schenk, president; J. H. McGrew, vice-president; H. W. Campbell, secretary and treasurer, and C. Frederichson, general manager. The company will manufacture a general line of clay products and hope to have the plant ready for operation by the 1st of July.

The Laughrey-Hatton Brick Company, of Hatton, Ohio, has been incorporated with a capital of $53,000 by R. H. Ferguson and others.

John and J. J. Closner will erect a 70,000 daily capacity brick plant at Edinburg, Tex. They will at once build four kiln with a capacity of 120,000 brick.

The Lignite Coal Co., of Mott, N. D., has been incorporated by F. G. Orr and H. M. Cornell and will erect a plant for the manufacture of brick and tile.

Ground has been broken at Atlanta, Texas, for a brick plant of 40,000 daily capacity. It is hoped to have the plant ready for operation by the first of June.

The Bloomington (Ind.) Brick & Tile Co., has been incorporated with $1,000,000 capital stock. Charles C. Shinn, of Logansport, is at the head of the company.

The Algood Brick Co., of Algood, Putnam county, Tennessee, was recently incorporated by A. P. Pointer, J. T. and F. L. Moore, J. B. Davis, H. M. Budd and others.

J. E. Ladson and Charles M. Goforth, have organized the Ladson Brick & Tile Co., and will erect a brick plant at Moultrie, Ga., with $20,000 capital stock. They expect to manufacture brick, tile, sewer pipe and other clay products.

Articles of incorporation for the Birmingham Hollow Tile Company, capitalized at $15,000, with a paid-in capital stock of $10,000, have been filed at Birmingham, Ala. Officers and incorporators of the company are R. L. Gamewell, president and manager; W. T. Gamewell, vice-president, and A. B. Gamewell, secretary and Treasurer.

The Kenton Brick & Tile Co., of Kenton, Ohio, has been organized and the following officers elected: President, John Jordan; vice-president, Ed Schindewolf; secretary, John Schmidt; treasurer, George Schindewolf. The company has taken over the old brick plant and will bring same up to date with everything in shape for operation in the near future.

The Straight Clay Products Company of Des Moines, Iowa, has been organized with $2,000,000 capital stock. It is the plan of the company to build an immense plant at Des Moines for the manufacture of paving and building brick and hollow tile. F. W. Straight, Des Moines, is president of the company; Tom Green, of Sioux City, vice-president, and L. E. Stone, of Des Moines, secretary-treasurer.

The plants of the Reynoldsville Brick & Tile Company at Reynoldsville and Sykesville, Pa., have been purchased by the Hydraulic Press Brick Company of St. Louis, Mo. Both plants are being overhauled and put in shape for operation at an early date. The business will be managed from the DuBois office of the Hydraulic company, Mr. Lyon, the district factory manager, being in charge. Charles G. O'Donnell, the superintendent for the past ten years, will be retained as superintendent of the Reynoldsville plant, and Harry Haag as superintend at Skyesville. It is the intention of the new owners to retain every man now on the pay-roll of both plants.

The New Castle Refractories Co. is the name of the company which recently took over the plant of the New Castle Stamping Co., New Castle, Pa. The new company plans to spend about $100,000 in improvements and alterations in the plant and to begin the manufacture of brick and clay products in the next month or so. Walter S. Kupfer, president of the American Dressler Tunnel Kiln Co., New York, and treasurer of the Universal Sanitary Mfg. Co., New York, with a plant at New Castle Junction, Pa., is head of the new company. Paul Meehan, chief engineer of the Kupfer interests, will be in charge of the changes to be made in the old stamping works.

With the business of the firm growing with exceptional rapidity, the Greenpoint Fire Brick Company of Brooklyn, N. Y., is anticipating the necessity of making a further expansion in its facilities in the not far distant future. Recently the plant of the firm was increased in size, warehouses were added and facilities increased for the aid of the trade and to meet all requirements with prompt deliveries, but the growth of the business continues to be such that it is believed by members of the firm that the time for which the new improvements were expected to suffice was estimated at too long a period. The warehouses of the company are located at 373-377 Borden avenue, Long Island City, and afford the company exceptional facilities for the economical handling and distribution of boiler furnace brick, etc. The executive office is located at 111-113 Clay street and the Greenpoint factory is at 409-413 Oakland street, Brooklyn.

We have a request for a copy of Squire's "Hollow Tile Houses" and will be pleased to hear from any of our readers having a copy they will be willing to dispose of.

James H. Banatti, an employe of the John M. Ward & Sons Brick Company at Pittsburg, Pa., was seriously burned when a fire broke out in the machinery building, causing a loss of $4,000.

R. E. Griffith, who recently severed his connection with the American Refractories Company, Pittsburgh, has become identified with E. J. Lavino & Co., Bullitt building, Philadelphia, as refractories sales manager.

James E. Flanagan Pottery Co., incorporated in June, 1919, with a capital stock of $50,000, has taken over the building in Byesville, Ohio, owned by T. W. Scott and C. C. Cosgrove, of Cambridge, and A. J. True, of Byesville, and will start immediately the erection of a two kiln pottery.

The Guignard Brick Company at Columbia, S. C., will start to burn their third continuous kiln this spring. Two kilns have been in continuous use for a number of years. The third kiln was finished in 1914, but has never been in operation, but the demand for brick in that section is such now that all three kilns will be in use from now on. The Guignards consider themselves fortunate in having this kiln erected back in the good old days, when the cost of construction was only about one-third what it would be now.

The Watsontown Brick Company has purchased title to one of the most valuable pieces of property on Main street, Watsontown, Pa., and will at an early date commence the erection of a two-story office building for their own use. When finished they will bring a considerable share of their office force from the plant building to the new location. The new structure will be appointed with all modern conveniences, will be erected of handsome brick, and a very marked improvement to that part of Main street, where it will be located.

Stockholders of the New Castle Mining and Clay Products Company held their annual meeting at the offices of Vice-President George T. Weingartner, and elected directors and officers for the year. The directors named are as follows: M. A. McLure, George T. Weingartner, E. W. Beadel, H. G. Preston, F. L. Rentz, John A. Butler and C. H Andrews, these men being the old board. Directors elected the following officers: President, M. A. McLure; vice-president, George T. Weingartner, and secretary and treasurer, Charles H. Andrews. The company will manufacture fancy brick of all kinds. The products of the plant for the year is oversold and there is a widespread demand for the output of the new concern. It was announced that an increase in the capital stock of the company from $60,000 to $100,000 has been authorized.

The Hebron (Neb.) Commercial Club has appointed a committee to investigate the clay beds adjacent to the town, with a view of locating a brick factory there.

Charles W. McDaniel of Ronceverte, W. Va., writes that he is interested in a company which has plans under way for the installation of a building brick plant with a capacity of 30,000 brick per day. He would like to correspond with parties equipped for testing clay, and also to receive catalogues of brick machinery and plant equipment.

The Tilbury Brick and Tile Company's plant at Tilbury, Ont., Can., one of the largest and best equipped for manufacturing tile in the province, was destroyed by fire March 4. The cause of the fire is supposed to be spontaneous combustion in one of the hot air drying rooms. The estimated loss is $30,000, insured for $15,000. H. H. Hallatt, president of the company, says that the plant will be rebuilt at once.

W. H. BIRCHER
225 Miller Bldg.
Scranton, Pa.

M'FG. AGENT.
Northeastern.
Pennsylvania.

Eleven Years with
Pennsylvania
Highway Department.

Is open to REPRESENT
RELIABLE manufacturer
of VITRIFIED BRICK
also TERRA COTTA
PIPE for State and
Municipal work.

ANNOUNCEMENT

We beg to announce that on or about April 1st, 1920, our Main Office will remove to more commodious quarters at

709-717 Sixth Ave.
(Corner 41st St.)
New York, N. Y.

Our Postoffice Box Number will be 119 Times Square Station. Telephones: Bryant 9880-9886.

THE ROESSLER & HASSLACHLER
Chemical Company

"America's Leading Ceramic Material House"

See Ad on page 426.

This Picture Shows

An Installation Complete, Ready to Operate, of

Gas Producers Furnace

Furnace Gas Producers on Standard Brick Co. Kiln, Crawfordsville, Ind.

Note its Simplicity--Can be Installed Between Burns

25% to 45% SAVED

In Time and Fuel on Plants Now Using It.

Try it Out on One Kiln.

International Clay Machinery Co.

DAYTON, OHIO

CINCINNATI BRICK AND BUILDING NEWS.

THE BUILDING SITUATION here is perhaps not materially different from any other city in the country at this time. There has been a fair amount of work undertaken and contracted for, but in some cases after figures are given out they are recalled by the prospective builders. The cost of building is so high these days that even though there is a very serious lack of homes and apartments, the fact that prices are so high on both material and labor makes it a serious question for those inclined to build to go ahead. They are doubtless of the opinion that prices must come down, and while this is not seemingly more than a hope, still it has an effect on the general situation.

The weather here has been somewhat unfavorable for the increased demands for clay products. There will likely be some betterment with the advent of more promising days, and this will naturally be augmented with the great need for homes now. As for factory construction and office buildings there is also a need, but this class of work will more likely be undertaken than the building of homes and, of course, this will prove to be a help for the clay industry. There has been a very fair demand for clay products other than brick, such as sewer pipe, flue linings, coping, and other specials, so the manufacturers of these commodities are more favorably situated than the brick men. However, there is a complaint among the latter class of clay men to the effect that the car shortage has been serious, and in this way has held up shipments.

According to one prominent authority there is likely to be a decrease in the building industry, due to the ideas of living that have gained such a foothold in the public mind, and these are sure to bring about a reaction that will hurt for the time being, though the effect will later prove to be beneficial.

It is estimated that there are now about three thousand houses in need here, and with the high cost of material and labor, it appears that the public is not seriously inclined to take any great amount of action to better this condition at this time. In view of the present conditions there are still higher wage demands being made, and the aspect of the situation is not flattering.

According to a recent report here it has been stated that frame construction is now costing more than brick, at least for a certain class of houses builded on the model home plan. This became apparent when figures were obtained for homes of this kind that may be builded in an eastern section of the country for the housing of a number of employes of a large coal company.

George E. Rendigs, retiring building commissioner, was presented with a gold watch by his associates in that office some days ago as a memorial for his past services. Mr. Rendigs will engage in business with Rudolph Panzer and James Martin, who were also in the building commissioner's office. An address was made by George R. Hauser, who succeeds Mr. Rendigs as building commissioner. Mr. Rendigs was the recipient of a letter from Mayor Galvin complimenting him on the conduct of his office.

The Fischer Specialty Machinery Co. will build a new plant to cost about $100,000 in the south end of the block bounded by McMillan, Morgan, Dover and Iowa streets, Walnut Hills. Thirty-two thousand square feet of ground have been purchased for this purpose. Plans are being prepared for a structure that will practically cover the entire lot.

Additional ground has been purchased by the Lukenheimer Co. for the building of its new plant at Hartwell. Plans for the first section of the new plant have been prepared by Frank Chase, Chicago. This will be the iron foundry. The complete plant will be large and it will not be entirely finished for some time.

Joseph G. Steinkamp and Bro., architects, are preparing plans for a home for Edward A. Schwartz, to be builded at 5721 Glenway avenue, Price Hill. It will be of brick and the bungalow type.

The Davis Welding Manufacturing Co. will build a new plant to cost about $150,000, including the ground, in the southern end of the northside district. The ground cost nearly $40,000. The first building to be erected will be the tank shop, to contain about 30,000 square feet of floor space. The company makes tanks for oil delivery.

The Wm. E. Dee Manufacturing Co., Chicago, Ill., has moved its local office from the Builders' Exchange on Race street, to 1403 Union Trust Bldg. The report here is that business in clay specials is very satisfactory with all things moving well now.

Reports with the Purcell Brick Co. are that the demands have fallen off some of late for face brick. The hope is entertained that the future, with good weather, will see a revival to the demand.

There is not very much activity with the Moores-Coney Co. and the brick industry here is rather slow now. There is not the same active demand that should be noted at this time of the year, and prices being high have no doubt affected the situation some.

The F. E. Grand Brick Co. has little of interest to note at this time, it being found that prices on materials and labor are handicaps that are not helping the situation, even though there is a keen need for homes at this time.

Business has been fair with the Evans Builders Co., but the lack of cars is not helping matters, and this has been holding back shipments from the plant. The outlook for clay products appears to be very fair, and it is hoped that the car situation will improve now with the return of the railroads to the owners.

The Cincinnati Clay Products and Manufacturing Co. has been enjoying a nice demand until lately, when there has come a slump in the call for clay products, including brick. The situation, however, appears to be good, and there will no doubt be a better demand in the near future.

The demand for common brick has been very good, but the supply being low has made this appear to be larger than it really is, so that there is little common brick here now. This will be bettered in the near future, however, as there will be shipments arriving soon. One of the sources will be from the Blair Brick Co. plant, which will very soon be operating again.

CINCY.

CRISIS AT HAND.

The fat brickman seemed to be in a nervous mood. "Whatsa matter?" sympathetically inquired his friend, the thin hollow tile man.

"My wife is a movie fan"—

"That's not so bad."

"But she has formed the habit of dressing like any particular star that strikes her fancy. The other day she came home with her hair fixed like Mary Pickford's. And the next afternoon she had it dressed like Norma Talmadge's."

"Some class!"

"And this morning I saw her trying to fix up like Theda Bara."

"But why should you worry about a little thing like that?"

"I have just heard that Annette Kellermann is coming to town."—Selected.

The Modern Way
1. Only one central coal location
2. Clean kiln yard
3. No cleaning of furnaces or re-lining them, or bag walls ever required
4. Minimum labor attention and responsibility
5. Much shorter kiln burning periods
6. Heavy saving of fuel
7. Increased burning capacity wirhout additonal kilns.
8. A better and more uniformly burned product
9. Avoids smoke nuisance absolutely.
10. And many other advantages
PRODUCER HOUSE
The Old Way
1. Excessive and wasteful burning conditions
2. Requires wasteful manual labor
3 Longer kiln burning periods
4 Uncertain burning results
5. Expensive product wasted through improper burning
6. Heavy kiln repairs needed
7. Unsightly conditions, etc.

THE DAY OF FIRING KILNS BY HAND IS PAST

The Underwood Producer Gas System of Burning Clay Ware in Up-Draft and Down-Draft Kilns has proven that it is scientifically, theoretically, fundamentally correct.

This proof is indisputably established by the records made in many installations now in operation.

The problem of burning your ware is the greatest of all stages of manufacture. No committee can investigate all burning systems in use and report on all of them to each existing plant and advise what is best for each. But we will fully investigate your burning conditions if you will investigate the Producer Gas Burning System for periodic kilns. We will then compare our investigations and co-operate to solve your burning problem on the highest economical baseis.

If you want to reduce your burning costs, let us begin co-operating now.

Write for the interesting "Story of Clay."

The Manufacturers Equipment Co.

Dayton, Ohio, U.S.A.

Mention The Clay-Worker.

SEEN IN NEW JERSEY.

PRICES for common brick continued to climb during the past month, and in some localities are at record levels. Nor does the end seem to be even in sight. Makers are insisting on these full prices, and inasmuch as builders must have the brick, they are paying the price. Apparently, too, the same conditions, substantially, control in all localities. Buyers are paying the price regardless of their feeling that costs for structural material have reached almost prohibitive levels. They fear that if the advances in different building materials are to go up much more all operations of consequence will cease, largely because potential builders cannot afford to go forward. Meanwhile, however, a steadily growing request for houses continues, and it would appear from what has been said over and over again that this request is certain to continue indefinitely. Newark is getting $25 to $30 for common brick, depending upon deliveries, whether in large or small quantities, and holders there say that prices will go higher. Jersey City is asking $24 to $25. Paterson is quoting as high as $27.50 on the job, but sales have been made as low as $23 in large lots. Trenton asks around $24 to $25. New Brunswick is selling at $23 to $23.50. Elizabeth, where considerable development is in progress, is asking $24. Hackensack is getting $24 at the yards. Rutherford quotes as high as $25. Englewood is holding stocks as high as $27.50. Ridgewood has sold very few because the stock was not available, but has asked as high as $30. Perth Amboy, in the center of the brickmaking industry of the Raritan valley, is getting as high as $23.50 and sometimes $25. In small lots all these prices are higher. Transportation has tied up deliveries for more than a month and the scarcity of brick for urgent work is one reason for the high prices.

Walter C. Schmulz, at Hackensack, has been installing a steam dryer, the first to be put into the Hackensack district yards. The dryer is now in operation, and it gives him the first all-the-year plant in that vicinity. It is understood that other yards may follow his example and install machinery for all-the-year operation. The insistent demand for brick and the high prices to which they have gone have served to attract favorable attention and considerable development in modern directions may result.

Nathan H. Sloan, broker, of Paterson, says that his trade is larger now than it has been in years, even if he goes back before the war for a precedent. In fact, so large are his sales that he has difficulty in finding sources of output sufficient to cover some of his orders, which literally run into the tens of millions. He has been forced to journey far afield in looking for these sources, and not long since invaded a distant portion of New York State. The objection to these distant sources is the high freight rates, yet it is quite impossible to get the required brick nearer home, and buyers find it necessary to accept what he can give them, regardless of freight rates, which add to the costs.

Paterson is going to erect a good many buildings this year in which brick will be an important part. Bids were opened for a new grade school not long ago and the total cost for the building was placed at $660,000. What will be done about building it is another matter.

Mayor Frank J. Van Noort of Paterson has formed a housing committee which somehow or other seems actually in a fair way to do something. This is recognized as quite unethical for a committee, yet strange as it may seem, this committee has investigated, made a report and offered suggestions which are singularly practical. For example, the city owns numerous lots in various localities which it has been forced to take over for taxes. The mayor's housing committee suggests that houses be erected on these lots and the whole sold to deserving seekers for homes, they to pay for them the same as rent. The mayor thinks in this way he can get many needed houses built and at the same time dispose of lots which are of no use to the city, though it is compelled to carry them. The same committee is making it more or less interesting for rent profiteers.

One of the interesting features of the recent storm, which resulted in tidal waves and a steady pounding by high water all along the New Jersey coast, was the failure of a concrete sea wall at Longport. While concrete engineers point to the fact that the wall was not reinforced and that it did remarkably well to stand up as long as it did, the other fact is equally apparent. It did not withstand the waves and lies now in ruins. It is true that the waves pound hard at times, and strong indeed is the structure that can withstand their power, but the concrete people are so determined to emphasize the assertion that their structures are virtually immovable, once they are built, that a failure like this has its lessons. Concrete seems to be letting go almost more than any other structural material under such stresses. Possibly it is because misguided individuals and municipalities are pinning their faith to concrete in greater numbers than ever before. Perhaps it is some other reason. Anyhow, the real fact is that these concrete structures fail, as this sea wall failed, and the ruins are mute evidence of the weakness of a building material which has been made popular by propaganda.

The city commission at Millville has the right idea about safety from fire. It has lately made a regulation that all chimneys hereafter erected within the municipality shall be lined with terra cotta. They say that the number of chimney fires, with their accompanying dangers, prompted this very sensible action. Such a use of terra cotta is an added assurance that no structure within the community will be destroyed from the effect of chimney fires.

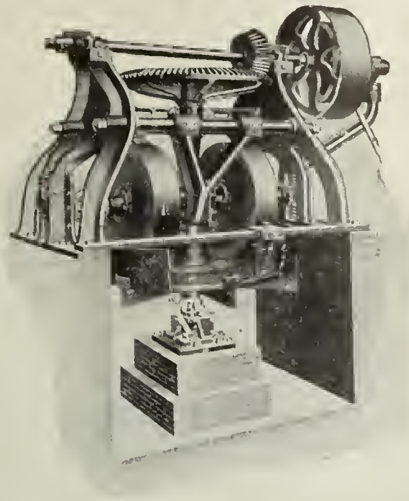
The demand for face brick through the State continues active, and prices range from $45 to $50 a thousand. Many are using them who never used them before and are confident that they not only improve the appearance of their structures, but also add to their durability. Hollow building tile, drain tile and pipe, partition tile and other similar products are wanted and are selling at high prices. Fire brick is selling up to $72 a thousand, though some are offered as low as $67. The supply is none too large and most holders are firm in their views respecting prices. Movement would be larger if shipping facilities permitted further expansion.

Newark brick men are as busy as they commonly are in midsummer. The building in progress and projected in Newark so far exceeds anything in the previous history of the city that building material men are puzzled to keep sufficient supplies on hand. Even though prices rule high, most of the interests in and about Newark who contemplate building are going ahead regardless of the conditions and seem disposed to build their new shops and homes anyway. The present trade promises to be even larger as soon as the weather opens so spring operations can begin. With the immense new factories which are to be erected near Newark and many other buildings projected for this season in that vicinity, the market for brick seems likely to be better than ever before.

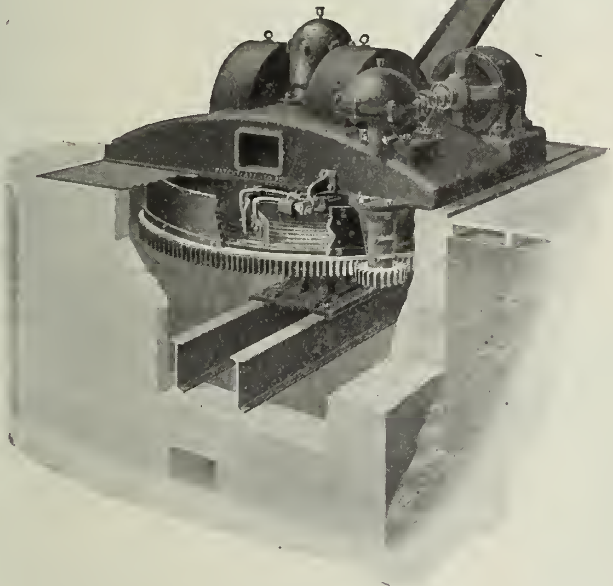
The Crescent Brick Company, manufacturers of fire brick, Eatontown, has filed articles of incorporation, giving its capital stock as $150,000. The directors are Frederick A. Ross, Lorenz L. Brosnana and John T. Eagan.

The shipping situation causes a good deal of trouble in this State. It is next to impossible to get anything done, though it is said that the railroads are doing better since they passed into private control. But it is almost impossible to get cars, and when the cars are obtained it is equally impossible to get them hauled anywhere.

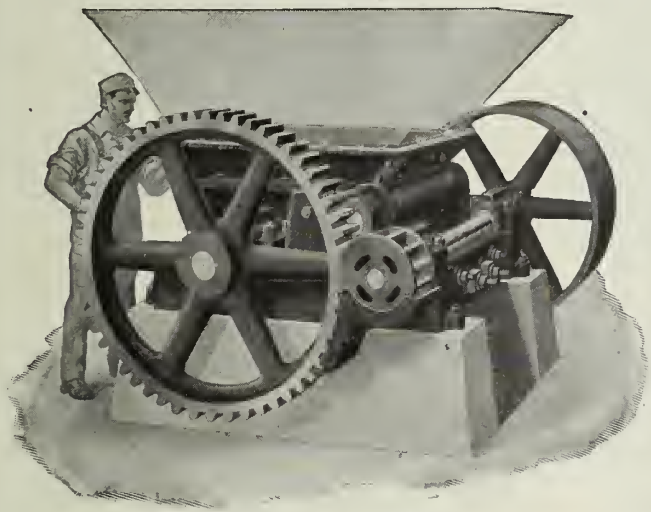
A. L. B.



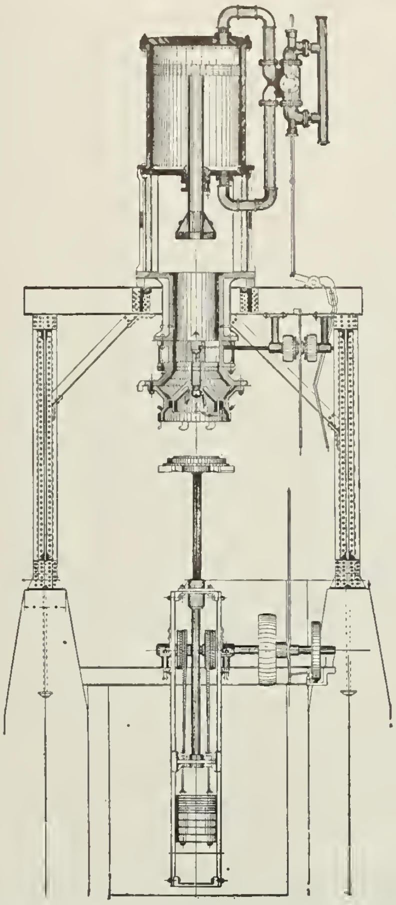
Standard Grinding Pans Made all Sizes



Model A-300 Step Bearing Type Dry and Semi Dry Grinding Pan



Single Roll Crusher



Sewer Pipe Press

Machines for
Crushing,
Grinding,
Pulverizing,
Empounding,
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Elevating and Conveying all
kinds of Materials.
Steam Presses for Making
Sewer Pipe, Drain Tile,
Hollow Block, etc., are
Manufactured by

THE STEVENSON CO.,

Gen'l Office and Works **Wellsville, Ohio**

Engineering and Western Sales Office,
Monadnock Bldg., Chicago, Ill.

NOTES FROM DIXIE LAND.

THE BRICK, CLAY and tile industries hereabouts, dealers and contractors, have been about as active as a hard January and February would permit, coupled, in Memphis, with a three weeks' ban to stay the influenza.

The car situation has been such in nearly all lines as to retard deliveries of material and what building has been in progress has been under handicap. It is certain, however, to be very active with the first warm days of March. Indeed considerable work is under progress now but is moving very slowly. The strike situation at Little Rock and Pine Bluff is reported improved. Business is active at Chattanooga and Nashville with no serious flu trouble there.

A good deal of brick work has been planned by architects and contractors in Memphis the last ten days. Two large hotels and apartment houses in the residential section being in the lot. Good progress is being made on the Pantages Theater this week and also on the Metropolitan. The contractors on the former are also the contractors on the Methodist Hospital under way.

The F. R. Thomas Clay Products Co. launched in Memphis as a new firm a few weeks ago and located at 301-2 Central Bank Bldg., are handling Louisville fire brick and a large range of clay and terra cotta products in carload lots.

The Western Union Telegraph Co., now at Main and Monroe, are to have a new brick home at the corner of Monroe avenue and S. Second street, construction of which has started and which structure will cost about $200,000. The Western Union will also make extensive improvements at its plant at Meridian, Miss.

Architects Jones and Furbringer, of Memphis, have completed plans for the twelve-story hotel to be erected of brick and fireproof materials at the corner of N. Main and Adams for the Tri-State Hotel Co. The stock is being placed on the market now and subscribed for rapidly. John T. Walsh, Jos. Isele and other Memphis capitalists are identified with the enterprise.

A seven-story fireproof apartment hotel on East Parkway, just off Poplar avenue, to cost a large sum and be modern in its appointments, is being planned for M. S. Binswanger, well known Memphis glass wholesaler. It will face Overton Park and be somewhat like the Chicago Surf Hotel. Architect Chas. O. Pfeil, of Memphis, and J. A. Armstrong, of Chicago, are the architects. F. B. Woolf and Co., of Chicago, who constructed and managed the Chicago Surf Hotel, are also connected with the enterprise. It will be fireproof throughout. The first story will be ornamental terra cotta, with light colored brick. It will have a sloping roof of red Spanish tile.

A six-story fireproof apartment house of the most modern type is being projected at Union and Peabody avenues, to cost around one million dollars. Chas. G. Smith, of Memphis, is at the head of this organization. The building will be located on the Kimbrough site. A frontage of 928 feet on two streets will give a commodious site. The building will be situated 400 feet from Union and 200 from Peabody avenue. The building will be 250 feet long, have seventy apartments from two to ten rooms each. The roof will be of red tile; swimming pool, roof garden, billiard room, cafe and many modern features are included.

Total value of building work in Nashville, Tenn., for 1919 amounted to $2,410.264.55, according to figures compiled by Supervisor of Buildings Robt. T. Moore. The report shows 670 brick houses. Nine one-story brick residences; forty-one one-story brick veneer residences; six two-story brick veneer residences; six one-story brick warehouses; four one-story brick factories; five one-story brick stores; one brick theater remodeled; one brick dry cleaning building; two brick apartment houses are amid the classifications. Also eleven brick garages; seven private brick garages; five brick churches.

DIXIE.

TOLEDO
ELECTRIC
SHOVELS

ONE YARD Dipper.
CATERPILLAR Truck.

Can be used as drag line excavator or ¾ yd. grab bucket crane.

Improved construction.

Designed especially for brick plant use.

THE TOLEDO
BRIDGE & CRANE CO.
Toledo, Ohio.

Manufacturers Attention!

Have you a ready outlet for your products?

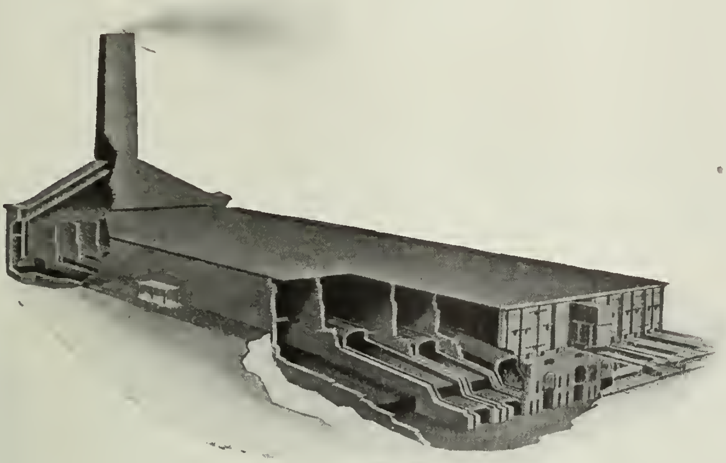
Are you seeking an Export market?

Have you satisfactory domestic representation?

Let's get together. We can put your goods in market channels in double quick time.

Beaver Industrial Corporation
90 West Street, New York

Wilson Kilns and Dryers



Wilson Hot Plate Dryer.

The most efficient Dryer now in use. Designed for small plants, with a capacity of from 25,000 to 40,000 brick per day.

Hundreds of them now in use.

We have Kiln Floors for round or square kilns that you should investigate.

Built by Brick and Clay Eng. Co.

Patented by Thos. M. Wilson.
" March 3, 1903
" August 10, 1909
" May 12, 1912.

Brick plant equipped with electric power from clay bank to siding.

Brick and Clay Engineering Co. kiln and dryer improvements used throughnot.

Considered by practical brick men to be one of the finest in the United States.

Capacity of above plant 100,000 per day.

Wilson's Kiln and Dryer improvements purchased by the Brick and Clay Engineering Co.

Brick and Clay Engineering Co., Incorporated.

Thos. M. Wilson, Mgr. **Greensburg, Pa.**

PACIFIC COAST NEWS.

THE PRINCIPAL item of interest in the realm of the clay manufacturers in California during the month of February was a general raise in prices of brick and hollow tile in the local market. Quite a decided increase was made in all items, but so far, San Francisco offices report no decline in the demand for building materials. Building permits have increased in number since the first of the year both in San Francisco and Los Angeles—in fact, in practically all Pacific coast cities, with a corresponding increase in the demand for brick and clay products.

Nearly all points in the state are facing a rather serious brick shortage. In some localities the situation is more difficult than in others—in the valley towns through the San Joaquin and Sacramento sections, there is a report that the yards are very nearly cleared of common brick and that there will be very little more available until the summer season. In Santa Barbara, for instance, there is a shortage of brick which brick dealers of that city say cannot be relieved until after July 1. The two yards there are entirely sold out and weather conditions during the past month have made it impossible for more stock to be turned out. Two large construction jobs calling for a considerable quantity of brick are now under way and when these are finished, further building of this character must wait.

The present ordinance in relation to the use of hollow tile in Riverside, Cal., is causing much discussion among the trade in that section of the state. At present hollow tile is prohibited in the class A building districts except for nonbearing partitions. The mayor of Riverside has appointed a special committee composed of competent men to investigate hollow tile construction and its merits. A request has been made that the city building ordinance be amended so as to permit the use of hollow tile in construction work in the city fire limits.

A one-story factory building, to be constructed of hollow tile is to be erected in Los Angeles, Cal., at 2643 Artesia street, to be used by the Batchelder Tile Company. The foundation is already in and construction work is to go ahead immediately.

The annual meeting of the stockholders of the McKnight Fire Brick Co., of Porterville, Cal., was held a few weeks ago and officers and directors elected for the new term. It was decided at the meeting that the activities of the plant should be substantially enlarged and arrangements made for the manufacture of building materials in quantity. Heretofore the products of the company have been limited to high grade refractories for use in cupolas, open hearths and smelter furnaces. Due to the scarcity of brick in the San Joaquin valley it was also decided to install machinery for the manufacture of face brick, building tiles, sewer pipe and roofing tiles, this end of the business to be taken up in gradual manner, first as a side line and later on expanding as the demand warrants. The production of refractories will be carried on as in the past. The clay supply is said to be ample for all requirements and to be easily accessible The new officers of the company are: R. S. Elliott, president; E. K. McBride, vice-president; John McKnight, general manager; E. M. Vogel, secretary, and C. H. McKnight, treasurer.

The government is erecting nine warehouses in Honolulu, to be constructed of tile which is to be supplied by Cannan & Company of Sacramento, Cal., manufacturers of interlocking tile. D. A. Cannon, head of the firm, states that the product will be manufactured at the company's plant at North Sacramento.

A small plant for the manufacture of tiles, etc., is to be established shortly at Ione, Cal., by J. C. Vaughn, J. Cass and put for their products in Stockton, Cal., where builders are H. S. Dennis. They have been assured of an immediate outfacing a shortage of brick and clay building materials. Raw materials are easily available and it is expected that the venture will meet with entire success.

According to L. E. Hays, manager of the S. P. Brick Co. at Exeter, Cal., the plant there is being put into first class shape for the manufacture of brick. This industry of Exeter has been shut down during the war, but the demand for brick is now large enough to warrant the reopening of the plant and on a somewhat larger scale than before. New machinery is now being installed and a working force being gathered together in order that operations may begin as soon as the equipment is in readiness.

Word has been received of the recent resignation of L. P. Singer, who has held the position as chief ceramic chemist in the terra cotta department of the pottery at Lincoln, Cal. He is succeeded by Mr. Larkin who formerly resided in Colorado.

Plans for a $150,000 pottery to be located at Ione, Cal., were discussed at a recent meeting held there and presided over by E. W. Perkins. Among others who are interested in the project is L. A. Steiger, of San Francisco. The plan is to utilize the large deposit of clay and sand which is found near Ione, for the manufacture of terra cotta brick, tiling and other forms of clay products. Up to the present time, the only activity about the deposit was the shipping away of some of the raw material. It was decided that a corporation capitalized for $150,000 with $100,000 actually subscribed, should be organized. If plans materialize the erection of the plant will be started by the 1st of May, 1920.

A bed of what is said to be extremely valuable clay has been discovered near Phoenix, Ariz., and business men of that city, realizing the need of a larger local production of brick and clay products, have interested themselves in the matter to the extent of planning to promote a company which will build a plant near the deposit and manufacture various kinds of building materials. The establishing of a plant in or near Phoenix is bound to lower the cost of clay products, for at the present time all material of this character has to be shipped in from Los Angeles, Cal., or El Paso, Tex. Experiments and tests in regard to the clay have been made by J. P Kent of the Kent & Graves Silo Co., 119 North Second avenue, Phoenix.

Improvements are being made by Gregory Bros. at the brick yard at Ione, Cal. A large trestle is now being erected which will convey the clay direct to the crusher instead of using teams for round-about hauling.

A good quality of fire clay has been found near Fallon, Nev., and C. P. Whitney and Fred Olzog are planning to install a brickmaking machine for the manufacture of pressed brick and expect to have it in operation in the near future. Later on it is expected that the manufacture of drainage pipe and other classes of fire clay work will be taken up in addition to the brickmaking.

San Francisco, Cal. SUNSET.

A MARVEL OF TRAINING.

Rose had called on her afternoon out to see her friend, Arabella. Arabella's mistress had just purchased a parrot, and Rose was much interested in the bird.

"Birds is shore sensible," she observed. "You kin learn them anything. I uster work for a lady that had a bird in a clock, an' when it was time to tell de time ob day it uster come out an' say 'cuckoo' jest as many times as de time was."

"Go along. You doan' say so," said Arabella, incredulously.

"Shore thing," replied Rose, "and de mos' wonderful part was dat it was only a wooden bird, too."

Engineering Library

APRIL, 1920

THE CLAY-WORKER

BRICK AND TERRA COTTA: Artistically Designed Entrance to the Y. M. C. A. Building, Cleveland, Ohio.—See Page 473.

Published Monthly by
T. A. RANDALL & CO.
INDIANAPOLIS, IND.
OFFICIAL ORGAN OF THE N.B.M.A.

Published monthly. Subscription price, $2.00 per year. Entered as second class matter, January, 1884, at the post office at Indianapolis, under the act of March 3, 1879. Title registered and contents Copyrighted by T. A. Randall & Co., 1919.

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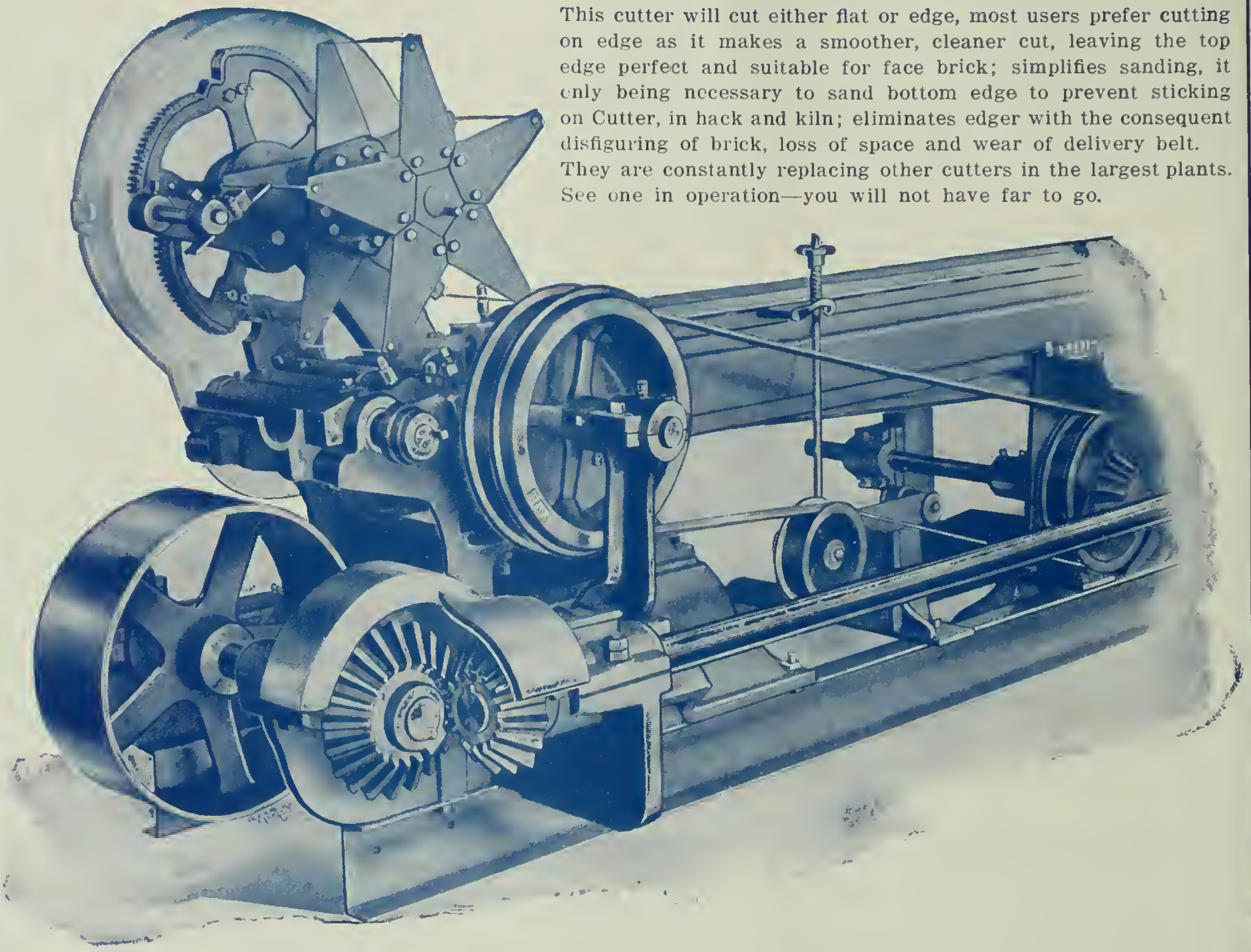
It Pays Well to Be On the Square,

Especially to Cut Your Brick Squarely

This is Exactly What the Steele Cutter Does and Continues to Do

This cutter will cut either flat or edge, most users prefer cutting on edge as it makes a smoother, cleaner cut, leaving the top edge perfect and suitable for face brick; simplifies sanding, it only being necessary to sand bottom edge to prevent sticking on Cutter, in hack and kiln; eliminates edger with the consequent disfiguring of brick, loss of space and wear of delivery belt. They are constantly replacing other cutters in the largest plants. See one in operation—you will not have far to go.



WHAT THEY SAY

Just a Few of Hundreds of the Same Kind We Have Received

W. E. DUNWODY, V. P., CHEROKEE BRICK CO., Macon, Ga.: "I think yours is the best cutter in existence. That is putting it about as strongly as I know how, and if you know any stronger way to put it, write me, and I will affix my signature."

BIBB BRICK CO., Macon, Ga.: "The two Rotary Automatic End Cutters installed for us about a year ago have given perfect satisfaction, and have not even required adjustment since putting them in. Our bricks are in much better shape than when we used the other cutters, cutting flatwise, the ends are always square, and bricks are not bruised as when we used edger. There is quite a saving in wires, as they do not break so frequently, cutting the narrow way."

SHREVEPORT BRICK & TILE CO., Shreveport, La.: "Your brickmaking outfit with feeder and car system, which we have operated three years has given perfect satisfaction. We really believe your cutter to be the best on the market."

Our Automatic Side Cutters Are Just as Good

J. C. STEELE & SONS Statesville, No. Carolina

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Western Representative: Geo. H. Smith, 3309 E. 37th. St., Kansas City, Missouri
Northern Agents: The Manufacturers Equipment Co., Dayton, Ohio
Eastern Agents: Carter Engineering Co., 39 Cortlandt St., New York City

THE CLAY-WORKER

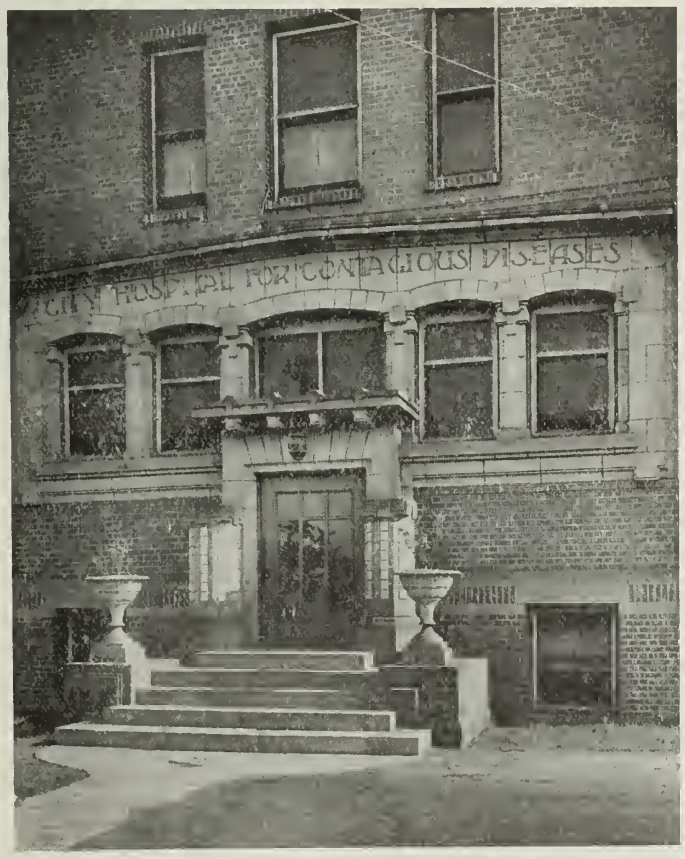
The Official Organ of the National Brick Manufacturers' Association of the United States of America.

Vol. 73. INDIANAPOLIS, APRIL, 1920. No. 5

BRICK AND TERRA COTTA.

Examples of Beautiful Decorative and Symbolic Designs in the Entrance of the Y. M. C. A. and Other Public Buildings in the Ohio Metropolis. Designed by Albert E. Skeel, F. A. I. A.

NO OTHER building material lends itself so readily to artistic decoration in architecture as modern building brick and terra cotta. This is demonstrated very effectively by the accompanying illustrations which depict the grace and beauty of well designed brick architecture. The entrance to the Y. M. C. A. and two other public buildings in Cleveland, Ohio, were chosen as examples by Architect Albert E. Skeel, F. A. I. A., of that city, to illustrate a brief article entitled "Expressing the Purpose of a Building by its Entrance," which we reprint from the Building Industry of Cleveland, to which we are indebted for the illustrations. Architect Skeel believes that the entrance to a building should express the purpose for which it is to be used and be as inviting and attractive as circumstances will permit. His idea is well portrayed in the accompanying views which are only a few of many similar structures which he has designed. Mr. Skeel has a remarkably happy faculty of combining art and utility in architecture, as the reader will readily observe from these fine examples.



Brick and Terra Cotta—A Happy Combination of These Materials in the Entrance to the City Hospital for Contagious Diseases, Cleveland.

Expressing the Purpose of a Building by Its Entrance.

By Albert E. Skeel, F. A. I. A.

Since the time that man advanced in the art of architecture, from the period when the cave was his covering and protection, to the time when he found the necessity of closing the mouth of his cave at times to safeguard his family and himself from their roving enemies, and thus produced an entrance, or doorway to his house, mankind, of the various periods, has spent a vast amount of thought and time, and has lavished his love of the beautiful to the utmost in decorating and enhancing the entrances of the buildings which he has erected.

It has become a trite saying that first impressions of either a favorable or unfavorable character are very difficult to eradicate, and this idea has spurred on the owner, who in turn has passed on his desire to his architect, to express in the entrance to his home or other building to be erected this feeling or wish to propitiate the observer with a feeling of pleasant regard toward his building.

As I have mentioned, the first necessity for an entrance was for protection. This idea remained with the man for a very long period of time; then came the time, however, when, in addition to safety, the desire to beautify the entrance became more dominant. This period has left a wonderful record in the history of architecture, and countless examples have been produced throughout the world.

Then came another period when the elaboration of the exterior did not entirely satisfy. So the products of wealth and beauty were expended on the immediate interior of the entrance. This was done to further the favorable impression created by the treatment of the exterior. Then, too, the interior was arranged for the formal and imposing entrance of the owner's guests.

With all this attention lavished on entrances of buildings, it is only of comparatively recent date that the elements of practical value, such as the vestibule in our houses, and the well-lighted exterior lobby with two or three sets of doors through which we pass into our public and commercial buildings have been patiently developed.

This feature of the entrance has been carried out in an endless number of arrangements for our modern buildings.

Thus the entrance during the passing of time has continually increased in importance, and today it is one of the most carefully studied problems in relation to a building.

One other thought that has gradually incorporated itself into the entrance of a building is that it should in some way indicate the character of the owner, or of the business carried on within its portals. This has been one of the most difficult thoughts to express, and the architect of today is to be congratulated if in some slight manner he has been able to incorporate this idea into the entrance of his building.

The illustrations shown are examples of the entrances of public or semi-public buildings that have been designed by the author.

EDUCATION THROUGH ORGANIZATION.

There is a disposition in the public mind now to separate trade association efforts into two broad classes. One, the older class, is regarded purely as educational, having to do with the discussion and development of modern methods in business. The newer idea is classed as commercial, and has to do more with advertising, salesmanship and the ethics of trade and trade relations.

It is well to make a distinction of this kind as it leads to clearer thinking. But, it is not well to get the idea that we are now well enough educated and are ready to graduate from education through investigation and devote our time in the future merely to what is termed commercial efforts through organization.

The fact of the matter is, education is perpetual and must continue and be a part of all organization efforts, whether that organization has to do with industrial progress through manufacturing methods, or with a better order of salesmanship and trade relation. In every case education is the keynote to the situation.

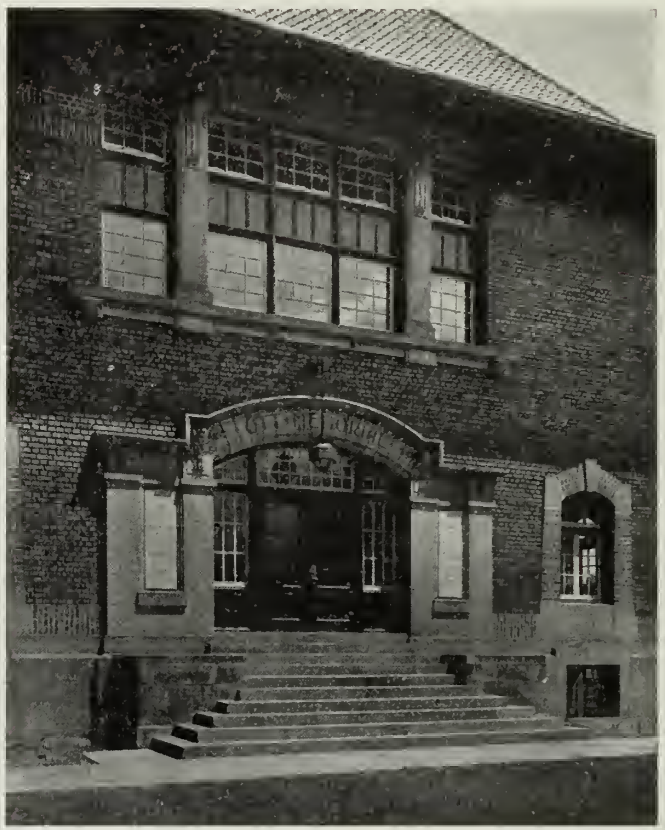
On the other hand, let us not lose sight of the fact that development at the manufacturing end, new ideas and methods are coming in and playing a part just as important today as at any time since the beginning of the 18th century when we had what was termed the great industrial revolution following the introduction of the steam engine in general use.

So important is organization work generally that the teachers of business today are recognizing it and treating of it at some length directly and indirectly. Illustrative of this, it is desired here and now, especially as pertaining to such educational work as it is done and has been done by the N. B. M. A., to quote part of two paragraphs from Volume 4 of the Library of the Alexander Hamilton Institute, which deals with modern business, the volume in question being devoted to plant management. On page 1, paragraph 1, we find the following:

"Men now living have seen the handicraft arts practically disappear and have seen machine industry, mass production, and factories of unbelievable size take their place. Younger men have known no other condition. To them it may well appear that this complex industrial fabric is fixed, or nearly so, but as change has been the order of the day in the past, there can be no doubt the future holds the promise of further developments. Industrial methods are still in rapid flux and with the kaleidoscopic industrial changes go far-reaching political and social disturbances. The industrial employer who ventures into this turbid sea without some knowledge of these changes and the tendencies which they portend is comparable to the sailor who puts to sea without compass or rudder."

Again on page 8 we have the following on modern industrial problems:

"There can be no doubt then that the distinctive problems of modern industry are those which grow out of the large size of industrial units. There is, moreover, every prospect that these conditions will be accentuated in the future. A clear grasp of what is involved in them is therefore of the utmost importance for all who would understand modern industry or play a role in it."



The Ott Memorial Building, Cleveland, in large part devoted to a gymnasium. The decorative motifs, too small to be clearly seen in this reproduction, tell part of the story. The big window above the portal indicates that a big room is being illuminated. The arrangement of the entrance makes the commemorative stones on each side a definite part of the whole.

Since this comes from what is regarded as the best authority in the country on modern business and business economics it is pretty convincing evidence that there is need today of a continuation of the educational methods for which the N. B. M. A. was instituted. Moreover, one may gather from this and from the trend of events today that keeping up with the times in research and development work, with new machines, devices and discoveries is even more important today than it was a generation ago.

Every man must, of course, read his trade papers and other available literature bearing on the subject and keep himself as well informed as possible through these channels. Then comes the rounding out of the work through meeting together in conventions, exchanging views and discussing the new ideas and equipment being developed. In short, while the educational organization has had its day in the past, that day was but a training day to the new and greater day to come in the future.

BUTTON-HOLE TALKS.

Gates Gets Chummy With King Hobo.

THE PARK HOBO, know also as the Park Lizard, and quite distinct from the Lounge Lizard, is an interesting study in human nature and well worth consideration. His kind are not confined to the parks but are quite well scattered and found much in other places, but cluster thickest in the parks. Wherever found they preserve their genius, while each having an individuality of his own. Human nature shows whether clothed in silk or rags.

W. D. Gates.

In Grant Park, in the mild weather, they in their rags, throng just across the way from the velvet clad throng in the palace hotels. On their newspaper beds they dream their dreams as do the plutocrats on their downy couches just across the street.

However, this is not their only place to kill time, and killing time seems their long suit. Other parks and other places attract them.

This time I found him, not in a real park, but by the monument erected at 18th Street and the Illinois Central Railroad. Here is depicted in bronze the massacre of the Fort Dearborn garrison and the incident where Black Partridge saved the life of Mrs. Helm. Just across the railroad are the waters of Lake Michigan, right alongside the Pullman residence and all around the fine old residences that, a few decades ago, were termed the "Gold Coast." He was a typical hobo, dirty and unkempt, and his head seemed to be floating on a sea of whiskers which boiled and foamed out of his coat collar. How I got him loosened up in a conversational way I need not, and shall not, tell. Presently I called his attention to the massacre at which he brightened up and said:

"Yes, those things are getting mighty common, the police are never where they ought to be and, and for that matter, if the police were not attending to their business, what was Old Man Pullman doing to allow such carryings on right here by his house? Why on earth couldn't he open his door and take them in till the mob got past? Anyway, if he had used his head and done some thinking, he could have broken the whole mob up easy enough by putting one of his porters out there equipped with a whisk broom and extended palm, guess that would have faded them."

"Indians, you say they were, yes that Goose Island gang are sure some Indians and a pretty tough lot and, if they were on the war path, and if the police were all out at the ball park, and if Old Man Pullman didn't do his duty and help them, and if these people were so set and determined to go down on the South side and along the Lake Shore, why on earth didn't they call a Yellow Cab or take the I. C. You know the I. C. ain't bad and it's inexpensive. Maybe they were too blamed aristocratic."

"What's that you say? The I. C. wasn't here then. Now, stranger, don't try getting gay with me. The I. C. has always been here. Just look at that engine going past right now. It's not a tea kettle, it's a sure enough engine. It rattles along, leaking steam and squirting water, shedding nuts and bolts at every joggle, every now and then dropping a grate bar, but it keeps on going, it always has and it always will. There isn't much left of the original engine but just the habit of running, but habit is strong and it will keep right on running as long as there is a grate bar left. Why the whole right of way of that railroad is elevated, built up gradually, by the junk that rattled off it's engine and the cinders blown from them. Didye see that big 1415 on the side of her tender? Her number? Go away, that's the date when they bought her. It really is tough when zero weather comes, it's pitiful to see those little 1400 B. C. engines suffer. They cough and sneeze and their noses run as they load up with snow and shake off icicles and seem pretty near giving up the ghost but they leak so much steam that it ultimately thaws off the whole Lake Front. It's awful, pitiful, and has won human sympathy, for the ladies of Hyde Park are now using the skill they acquired in knitting for the soldiers and are busy knitting sweaters for the poor little engines so that next winter these poor little long suffering engines can be warm and cozy."

"Well, stranger, if these people didn't take advantage of their opportunities or didn't have sense to size up their opportunities all I can say is they got what was coming to them and I'm not going to waste my sympathy on them and if you'll just let me have that other cigar, I see in your pocket, I'll be moving along." GATES.

CLAY IN SOAP MAKING.

There has been some recent consular reports about the development of clay as a raw material in soap manufacturing and now comes a report from Consul Irving N. Linnell, Plymouth, England, which intimates that the exports of clay from that country to the United States are increasing rapidly and may be further augmented by its use in soap manufacturing.

He refers to an article in The Chemical Age recently, telling of making colloidal clay from China clay.

The thought all this inspires is that here we have some possibilities for research development among our native clays with the end in view of supplying what may be required for the soap making industry.

THE LATEST MOTHER-IN-LAW STORY.

One of the brick men attending the convention told a story of labor shortage and calling in of the feminine element which is unusual in several respects. He let a contract on a piece work basis for brick setting. The man in charge of handling the work brought into action his mother-in-law as well as other members of his family both male and female, and while this was done as a sort of emergency matter, the interesting fact is that the mother-in-law liked the work so well that she preferred it to the usual drudgery of house work, and has kept it up, making more money than ever before and being better satisfied with life all around. This, we believe, is the latest disposition of the mother-in-law question, and has the novelty of leaving the mother-in-law and everybody else satisfied.

It is not a shortage of labor that hurts so much; it is a shortage of that spirit of co-operation to get the most work done which causes the most worry and dissatisfaction among employers.

Burning Clay Wares

by

Ellis Lovejoy

Written for The Clay-Worker.

THE CLAY-WORKER.

PART XLVII.

CAR TUNNEL KILN (Continued)

THE ZWERMANN single tunnel kiln is illustrated in Fig. 189, longitudinal section, Fig. 190, a diagramatic plan, and Fig. 191, a cross section through the burning zone.

The sketches are broken to reduce them to a suitable length for illustration, but the furnace section is shown full length.

In the cooling end are shown flues in the side wall, or rather forming a part of the side wall, and also it will be noted that the tunnel crown is double, thus forming a crown flue. The lower flues in each side and the crown flue have no part in the kiln operation except cooling.

These flues, which are one hundred feet long, more or less, are open to the outside air at the delivery end of the kiln and near the furnace section they terminate in a fan which draws the air through these flues and delivers it into a dryer or to other purposes in the factory independent of the kiln.

The other flues in the side walls, one on each side of the tunnel, have a pressure fan connection at the delivery end of the kiln, which forces air through the flues and delivers it to the furnace for combustion.

The combustion gases are drawn off through a fan near the receiving end of the kiln.

The dimensions of the kiln are, pre-heating zone approximately 150 feet long, furnace zone nearly sixty feet, and cooling zone about 140 feet. The tunnel is 6 ft. 4 in. wide and 6 ft. 6 in. high above the trucks. The lengths of the several zones and their total length will vary in different kilns, depending upon the character of the work to be done.

The furnaces are staggered except the final two burners, and it would seem that the purpose of this staggered arrangement is to get the equivalent of cross firing in the arches of up-draft kilns. The furnace box or arch is built on the truck transversely—one centered on each truck—and the ware is piled on each side and over the arch. In this we plainly have the idea of the arches in an up-draft field kiln. If the ware being burned in the tunnel kiln were bricks the setting would be such as to form the combustion arches from the bricks as in a scove kiln. As the cars advance the arches come opposite first one furnace on one side, then the next furnace on the opposite side, repeating to the end of the furnace section where the finishing touches to the ware are given by a pair of opposite furnaces.

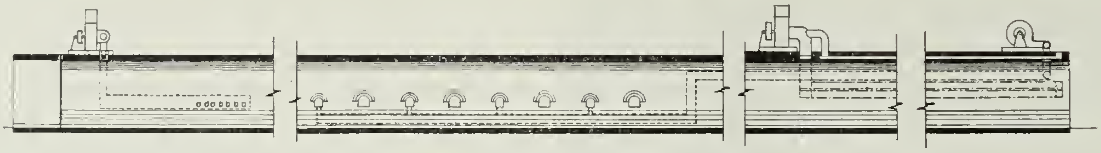


Figure 189.

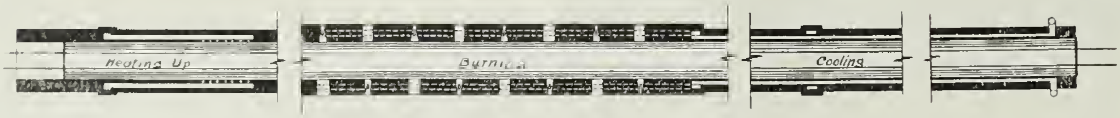


Figure 190.

A later design by Zwermann, shown in Fig. 192, cross sections, and Fig. 193, plan, has a double tunnel, operating in opposite directions. At either end there will be green ware going into one tunnel and burned ware coming out of the other tunnel. Near the end where water-smoking takes place in one tunnel and cooling in the other the division wall between the two tunnels is thin, in fact toward the end where the temperature of the cooling ware is a low red heat or less, the division wall is steel plate stiffened by pilaster walls which also support the crowns. On one side of this wall we have cooling ware coming out and on the other side green ware going in, with the reverse at the opposite end of the kiln.

By convection the heat from the cooling ware is brought into contact with the thin division wall and by conduction it is carried through this wall into the adjacent tunnel where baffles direct the currents of air and take the heat from the wall to the green ware.

The advancing green ware next passes into a muffled section of the tunnel. The combustion gases from the furnace zone are drawn back through tubes and the forward moving ware is heated up by the air in the tunnel circulating among these waste gas ducts and taking the heat therefrom to the ware.

This muffled section is the heating-up zone. From the muffled zone the ware passes the furnaces where it comes in direct contact with the flame from the furnaces or burners and the combustion gases pass down among the ware to the car floor level, thence back to the draft flue in the side wall and forward into the heating-up ducts above mentioned and out through the stack.

The ware goes forward into the cooling section, where the heat is given up to the ware coming in through the other tunnel. The two tunnels are identically alike except the several zones are reversed.

Along the central portion of the kiln the crown is double with a space between, and the air for secondary combustion is drawn through this annular space and becomes heated before bringing it into touch with the gas.

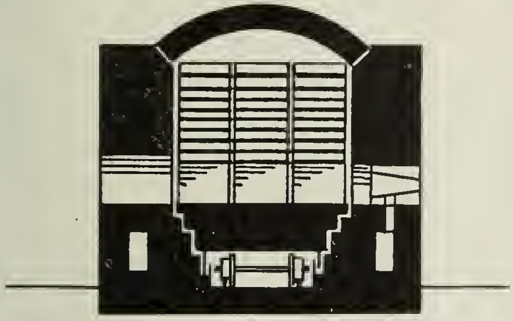


Figure 191.

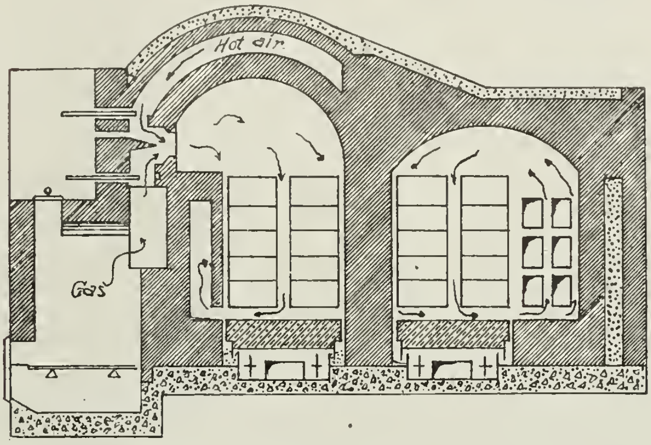


Figure 192.

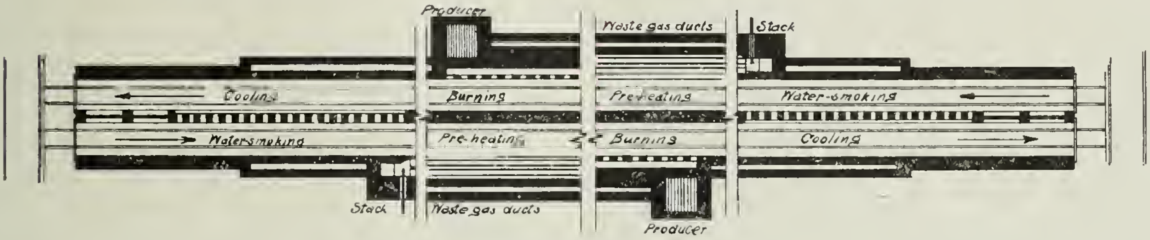


Figure 193.

A Dressler kiln is to be installed in an Ohio factory to burn common bricks, hollow bricks and drain tile. The kiln will be about 300 feet long and it is expected to turn out approximately 100 tons of hollow ware per day. The cars are to be 6 feet by 8 feet, and the setting will be 4 feet high, perhaps 5 feet. It is expected to pull the cars at the rate of one every forty-five minutes. The operation will be continuous and extra cars will be provided to maintain the operation of the kiln throughout the night and over Sunday.

The manufacturers of common clay wares will watch the result of this operation with a good deal of interest. Up to date there have been several attempts to burn such common wares in car tunnel kilns, but without satisfactory results.

(To Be Continued)

It will keep most everybody hustling to supply the actual demand of the times, but that is no reason for laying down on promotion work and cutting off the advertising.

UNITED STATES BRICK AND BRICKMAKING MACHINERY FOR EASTERN SOUTH AMERICA.

Alfred Thomas Marks.

OUR brick producers, as well as manufacturers of brickmaking machinery, will do well to investigate the trade possibilities of eastern South America, which is looking to us now as never before for these lines, and which will prove to be a most profitable market if we are able to surmount a few of the difficulties which at present stand in the way.

There is no longer room to doubt that our brick and tile products stand in better favor with the builders and the people of the southern countries than they ever did before. In fact, within the past three months many inquiries have come to the United States Department of Commerce, in Washington, asking that the writers be placed in touch with American brick exporters and manufacturers of brick-making machinery.

Before taking up the subject of the Latin-American brick market, it may be well to glance briefly at Cuba. Our $279,000,000 trade with that island in 1919 included both brick and the machinery for making brick. And this market may be regarded as one perculiarly our own. Everything bearing the name American has a genuine welcome awaiting it in Cuba, and—what means still more—we have in the Cuban tariff a "preferential rate" which gives us a very decided advantage over all other countries and enables us to set our goods down there at a much less expense than can other countries, no matter where located. These very essential advantages should be of interest to such of our brick manufacturers as may be inclined to reach out for trade or to build an export end to their business for future advantage or as an "anchor to windward." At all events, a new and rapidly opening market for our brick is developing in Cuba, with every influence favoring our brick and clay products, and it should be made the subject of serious investigation while we have the open door and stand in the position of "the most favored nation." We may not always have this advantage.

Brazil, Uruguay and Argentina—the most enlightened and most progressive countries of South America—are easily our most potential foreign markets (outside of Canada) on the western hemisphere. This for two reasons—they are now entering upon a period of rapid and extensive development, structurally speaking, which is fast leaving behind the old Spanish ideas and materials. Brick is the coming popular building material in all of these countries, and they will either import the brick or bring in the machinery to make it.

Building statistics of Buenos Aires, Argentina, for the last six months of 1919, show that the erection in that city and suburbs of brick structures totalled in the period stated 68 per cent. of the new building, with 14 per cent. cement and 8 per cent. wood. **And at present every brick is imported!**

Uruguay—the smallest and livest of the South American countries—uses brick largely in its chief city, Montevideo, and from reports gathered there by the writer personally, on a recent trip to Latin America, our brick will find a ready and waiting market in the country once we are able to find transportation facilities to deliver it. In fact, the feeling in Uruguay toward United States products of all kinds is probably the most cordial of any of the South American countries.

Brazil promises to be our best brick market in South America, as well as an almost unlimited field for our brick-making machinery. A few facts will show why this is true. Brazil is larger than the United States; it is fully 50 per cent. undeveloped; our trade relations are on the best possible basis; the people, per capita, are the wealthiest in South America; brick is preferred to all other building materials, and wood cannot be used, as the country is largely tropical and wood-borers and other destructive insects soon render wooden structures uninhabitable. The writer was told by a building contractor of Rio de Janeiro that there is a market in Brazil for all of the United States brick we can get down there. None is to be had there now of dealers, as the ready and watchful demand snaps them up as rapidly as they land. Practically all the brick from America which has gone to Brazil—and there has been a great quantity—was ordered in this country and sold long before it reached there.

It may be gathered from the above brief survey that the question of our brick trade in Latin America depends for its solution on the matter of transportation almost wholly—and this is the fact. The market is there, the demand is there, the good will is there, the money is there—and it is simply "up to" those of our brick and brick-making machinery manufacturers who are looking toward export trade to find a way to deliver the goods. The balance of the proposition takes care of itself.

Fire Brick for Argentine.

In the quinquennium immediately preceding the war Argentina imported 25,085,000 fire bricks, of which Great Britain supplied 21,903,000, Germany 1,430,000, Belgium 735,000, the United States 720,000 and France 220,000. The importations for the war years have been considerably less, of course, amounting in 1917 to 1,793,000 bricks. According to Consul General W. Henry Robertson, of Buenos Aires, American exporters find it difficult to compete in this trade largely owing to the great amount of British capital invested in railways and industrial companies in Argentina.

Nearly every one is more or less interested in the subject of how much should be spent for advertising. A good way to find out and get more specific light on this subject is to do more advertising, do it intelligently and watch the results.

DISTRICT OF COLUMBIA MANUFACTURERS RUNNING FULL CAPACITY.

DISTRICT OF COLUMBIA brick manufacturers report trade conditions as being better than for many months past, with orders piling up for future delivery. While prices on common brick (on which there is the greatest demand) have been advanced slightly by all of the manufacturers, the figures are still considerably below those prevailing in many other sections of the country, and it is not improbable that further increases may be necessary. All of the plants are running up to the limit of production, with several engaged in substantially enlarging their producing facilities.

Mr. L. Perry West, of West Bros. Brick Company, looks for one of the busiest spring and summer seasons the industry here has ever had. In talking with The Clay-Worker representative, Mr. West said that while his concern is able to take care of the District of Columbia orders, it has found it necessary to refuse to accept orders for delivery outside of the District.

"A member of Congress from New York City," said Mr. West, "made an especially strong effort to get us to fill a big brick order recently. He is the president of a large construction company there, and owing to high prices, producing conditions and labor troubles in the Hudson river brick-making plants, could not get brick. He had his plans all made to transport the brick from here to New York by water in several barges, and tried hard to get us to book the order, but we simply could not handle it. We have orders now in, which will require well into the spring to fill. We have also, within the past week, refused orders for large lots of brick to go to North Carolina and other places outside of the District of Columbia.

"We are getting $19 and $20 for common brick, which is an advance of $1 over prices which obtained prior to January 1, of this year. Labor conditions are about normal again."

The Department of Agriculture announces that as a result of the conferences held on February 24 and 25, in the offices of the Bureau of Public Roads, for the purpose of securing uniformity in tests of road-building materials, a definite policy of standardized tests has been worked out which it is expected will prove satisfactory. Highway-testing engineers from 34 states were present at the conferences. While the matter of specific materials for road building was not taken up as one of the definite subjects for discussion, it is understood that there were many advocates of the use of brick under proper conditions in the gathering, including several manufacturers of paving brick.

The Southern Building Supply Company, whose yards are located in the northern suburbs of Washington, are new dealers in brick here, and report a steadily increasing volume of trade.

The Bureau of Standards, Department of Commerce, reports the results of elaborate tests of "two-way" reinforced hollow tile. This test, the bureau announces, has made considerable progress during the past month. A live load of about 400 pounds per square foot has been applied to the panels 16 feet square; a live load of about 250 pounds per square foot has been applied to the 16 foot by 19 foot panels, and a live load of about 200 pounds per square foot has been applied to the 16 foot by 22½ foot panels. This form of loading has equalized the stresses in steel reinforcement in all panels as nearly as it seems practicable to do so. It is now proposed to allow the slab to stand from four to six weeks. At the expiration of this time the test will be completed by loading the slab "to failure."

The Whitacre-Greer Fireproofing Company, with offices at 729 Fifteenth Street, N. W., has been made the Washington representative of the Atlantic Terra Cotta Company. The concern reports a good run of trade, with many unfilled orders on hand.

The John Miller Company, 911 H Street, N. W., well known in the brick trade of the District of Columbia, has taken over the plant of the Washington Brick and Terra Cotta Company, located at Waterloo, Va., just over the District line. The Miller firm will in future handle the output of the plant exclusively.

For the second time within the past year, the National Brick Co., whose plant and yards are at Terra Cotta, D. C., has enlarged its producing facilities to keep pace with fast-increasing orders. J. E. Granbery, well known in brick-making circles here, is president of the company. The firm has handsomely fitted Washington city offices in the Bond building.

The Virginia Brick Company, at Rosslyn, Va., across the Potomac river from Washington, is in the midst of its busiest season for years, and is running up to capacity. This company has many contracts in work for suburban residential building operations, and is supplying the brick for a number of the largest building contractors in the national capital.

ALTHOMAR.

THE PAST YEAR'S EXPORTS.

The export trade in clay products fell off a little during the year 1919, the loss being due to a decline in the export demand for fire brick. During 1918 there was a heavy demand for fire brick abroad and the total foreign sales amounted to over $5,000,000, whereas during the last year the total was only a little better than half that amount. The export trade in earthen ware, stone and chinaware as given by the U. S. Department of Commerce is as follows:

Building Brick	$ 248,690
Fire Brick	2,747,512
Chinaware	523,861
Earthen and Stoneware	1,148,051
Sanitary Ware	563,734
Tiles, except drain	628,836
All other	721,600
Total	$6,582,284

In addition to this total in clay products we exported fire clay to the total value of $262,501, and other clay to a total value of $249,571.

FINANCIAL ASSISTANCE FOR CLAY PLANTS.

Managers of clayworking plants, in common with managers in other industrial lines, frequently desire to make what seems necessary expansion, but are handicapped by lack of ready funds, which ofttimes local banks hesitate to furnish because of ignorance of the real value of clay properties. Bankers are becoming educated to the importance of clayworking industries, but in the meantime a Chicago firm, F. W. Morgan & Co., 1319 First National Bank Building, with keen insight has recognized the great opportunities for profitable investments in the clayworking field and has established a reputation for dealing in investment bonds issued as first mortgage on clay plants, where ample security can be offered.

A number of nigh-class clayworking concerns have been properly and legitimately developed through the assistance of F. W. Morgan & Company and have taken a place with other successful companies now able to take advantage of the unprecedented demand for clay products of all sorts. Among the number are such well-known companies as The Dennison Clay Company, Dennison, Ohio; Postville (Iowa) Clay Products Company; Clay Products Company of Brazil, Indiana; Abingdon (Ill.) Clay Co.; Western Shale Products Co., Fort Scott, Kansas; and the Whitewater (Wis.) Brick & Tile Co.

The F. W. Morgan Company maintain a corps of clay experts and will be glad to hear from concerns desiring to expand and develop legitimate clay-working properties. (See ad on page 549.) The Morgan Company enjoys an enviable reputation among reliable investment and banking houses.

LOUISVILLE TRADE NEWS.

EVERYWHERE on all sides in and about Louisville the great cry is to get enough brick, tile and other clay products to supply the urgent needs of the builders at the opening of the busy season. Local building operations are moving forward very nicely and there is noticeable a use of a greater percentage of brick even in erecting modest bungalows. The percentage of brick and tile called for is much heavier than in previous years, so the volume of trade will be good, even though building operations may not exceed the normal.

The brick and hollow tile manufacturers hope that as the season advances and they get the new run coming through their kilns they will be able to supply the needs. Right now, however, the call is urgent from all sides and actual building is being delayed in many instances waiting for material.

As an illustration of the present urgency in this respect, H. C. Cramer of the Lexington Brick Company was in Louisville recently trying to buy some brick to supply the temporary shortage in his own home town and help tide the builders through until their own plants get to turning out their full quota. He says he has his new automatic soft mud machine installed and at work and he hopes to be able to supply the actual needs after about a month, when stock gets to coming through good. Meantime some work is in danger of being held up for lack of brick and he was trying to help by purchasing some from outside. He was unable, however, to find any around these diggings, as no one had any surplus brick to spare.

J. T. Howington of the Coral Ridge Clay Products Company says they are crowding everything to the limit and are having to turn down orders right along. They are striving to so divide their brick and tile output as to supply the urgent needs of their regular customers.

T. Bishop of the Southern Brick and Tile Company says they are sold up and are unable to supply all their urgent needs right now. He has hopes, however, that a little later in the season they will be able to catch up a little.

It is pretty much the same story that comes from the West Point Brick and Lumber Company, at West Point. They are sold up ahead and have nothing before them now but busy times—no surplus stock to offer anybody.

Charles Hermann of the U. S. Brick and Tile Company, Tell City, Ind., who was in town recently, says they are running right along down there now, about the only hampering influence being a little coal trouble now and then. Like every one else, he says they are sold up and behind with orders right now, and it looks like they are going to be kept hustling all summer.

Capt. William E. Wheley, formerly associated with the R. B. Tyler Company in the brick and builders' supply business, has gone into business for himself as a distributor of clay products, with offices at 107 Todd Building, Louisville.

COLONEL.

REFRACTORIES

SOME CAUSES FOR FIRE BRICK FAILURES.

(Under the above caption the Elk Fire Brick Company of St. Mary's, Pa., has issued a little pamphlet for distribution to fire brick users. There is so much in it, however, of interest not only to fire brick users, but to manufacturers of all classes of clay products, that we reproduce it in full.)

A GREAT DEAL has been said concerning the failure of fire brick in actual service under some conditions and in specific cases. We venture the assertion that complaints have been filed with the makers of every brand of fire brick at one time or another. Much of this has been "constructive criticism" and has undoubtedly resulted in an improvement of the product, better fire masonry, changes in furnace design and construction, and last, but not least, better care of fire brick by the consumer.

These failures and the vigorous investigations which usually follow them bring better results to the particular concern affected but, generally speaking, the interested parties are the only ones who profit by the experience. Occasionally someone writes an article covering some of these features but up-to-date little has been done to bring the causes of these failures to the attention of other consumers and thus allow them to profit by the "experience." We are of the opinion that producers are in a measure at fault for not thoroughly informing the "trade" of the necessity and methods of properly caring for the fire brick before being placed in service. We have no doubt the consumer would welcome information of that nature and would provide against such misuse. We do not propose to criticise the user for neglect in this matter because many, doubtless, do not understand and have not been forewarned of the failures which generally follow misuse of fire brick.

First of all let us point out that fire brick are among the most expensive of clay products for the following reasons:

1. Good Fire Clay is scarce and consequently is worth a great deal more per acre than the very best grades of steam coal.

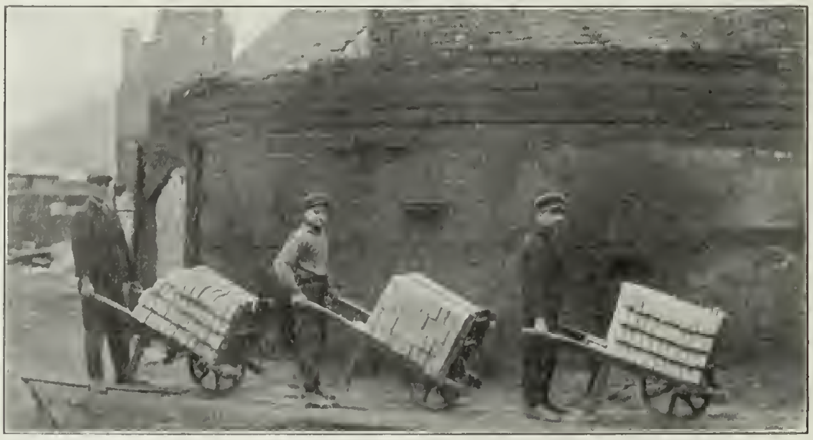
2. A very large proportion of fire clay used in the manufacture of refractories is hauled long distances, sometimes over standard railroads.

3. Labor contributes largely to the cost of fire brick as a very considerable quantity of them are made by hand.

4. The burning of fire brick requires high temperatures and, therefore, large quantities of the very best coal are consumed in their manufacture.

The high cost of this commodity behooves the producer and the consumer alike to exercise the greatest possible care. We fully realize our responsibility in this matter up to the time that brick are loaded on the cars and delivered to the transportation company. We also realize our responsibility

The Above Shows Where a High Price Was Paid for Cheap Mortar.



Method of Handling Burned Fire Brick the Proper Way.

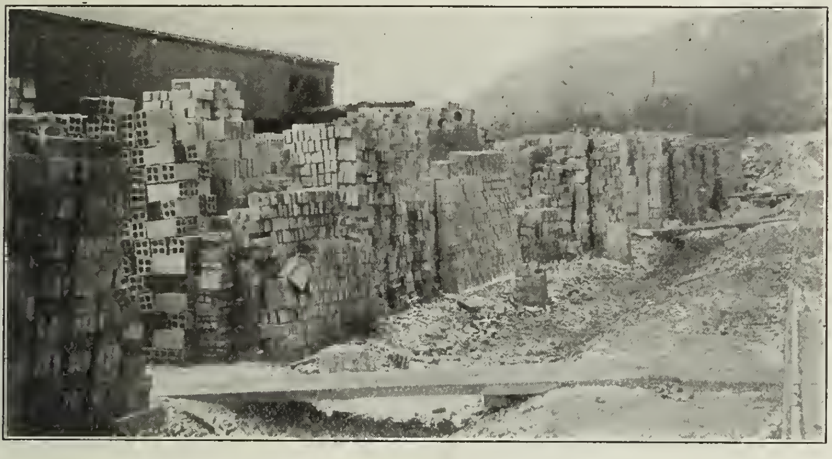
to the end that the longest possible life may be obtained from the use of our fire brick.

We will, however, undertake to first give you, in a general way, an outline of the care exercised in our plants prior to delivery of the material to the railroad company.

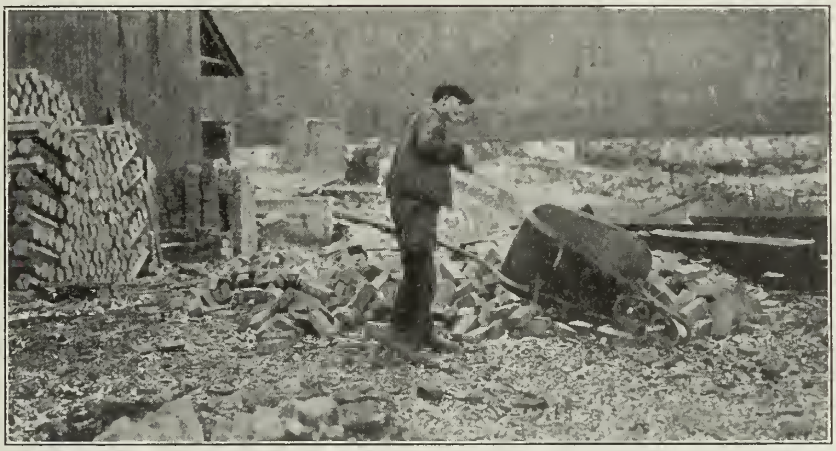
Nearly all our employes who are engaged in the making and handling of our material are "skilled men in the industry." No man is allowed to mould or press brick, handle them before burning, set them in the kiln or take them from the kiln until he has served his "good long time" as an apprentice. It frequently takes a year or two to teach a man to be a moulder, a presser, a setter or a sorter in our plants. He must be thoroughly trained as to how to mould a brick and how to press it, before he is given a permanent position. He must have wide experience before he will understand when cised by the foreman so that none but nearly perfect brick may reach the consumer.

We consider it essential to have none but experienced men handling this material in our operation. Even a brick wheeler, who wheels the brick from the kilns to the sheds or from shed to the car, requires some six months' training before he becomes efficient and is capable of handling our material with due protection to the customer and with a full realization of the importance of having the material as nearly perfect as possible. Every brick is handled separately in these operations to provide for close inspection and thus minimize the shipment of imperfect ware.

So much on the necessity of having trained and experienced employees, but that is only one of the many safeguards. After this material has been prepared for shipment,



The Cost of a Good Shed is Lost Annually by This Method of "Housing" Fire Brick.



Dumping Fire Brick as Shown Renders All Previous Efforts in Vain.

a brick is sufficiently dried to set it in the kiln. He must be an "expert" before he is given the duty of setting brick in the kilns to be burned. The kiln burner is perhaps one of the most skilled mechanics in the industry. He is just as important to our business as a smelter is in an open hearth steel plant. Some men never learn how to properly burn fire brick. The sorter who removes these brick from the kilns must have years of training before he will know how to properly sort the material into different grades of "burns" and to select a uniformity of burn necesary to success. After these men have all been thoroughly trained, we have "experienced brick makers" and that is the only class we can afford to employ. We always have apprentices who are being trained to fill the ranks of those who leave our service.

In every one of these processes the utmost care is exer-

it is placed in storage sheds provided for that purpose. These sheds are enclosed, having concrete or brick floors and perfect roofs. We would not consider allowing the finished material to be exposed to rain, snow or any other weather condition. The floors must be thoroughly dry because the brick will draw moisture from underneath. We know it is injurious and for that reason sheds are provided and the utmost care is taken to see that these brick are kept perfectly dry and free from frost. When they are loaded in the car, the brick in the stock sheds are again carefully sorted and imperfect ones are discarded. Each brick is handled separately and loaded in a box car so as to protect them from the weather while in transit. Furthermore, large quantities of straw are used in packing them in uniform layers all over the car so that the railroad company may not damage the corners or break the brick while transporting them. When the loading has been completed, the doors are closed and sealed so as to provide against brick in the door-ways becoming wet or covered with snow.

All this care is taken for a purpose. We would not do this if it were not necessary and surely we would not invest thousands of dollars in storage sheds to protect the brick from weather conditions unless it is essential. The whole aim throughout the operation is to deliver these brick to the transportation company in the very best possible condition; brick with the very best corners and brick of a uniform burn, packed carefully in the cars to withstand transportation abuse and protect them from weather conditions. If all this is necessary, and you will no doubt agree that we must be convinced of the necessity of doing it, then it must be equally necessary for the consumer to exercise the same care when these brick are received at destination. Unless this is done, our efforts will have been in vain and the expense incurred by this extra care is only a waste of time and money. Perhaps many consumers do not realize that there is a vast difference between fire brick and other brick. Building brick are made and burned to use in the construction of houses and buildings, to meet all kinds of weather conditions. Paving brick are produced, to not only withstand rain, snow, frost, ice, etc., but to carry heavy loads in wagons, automobiles, and other means of conveyance. They need not be protected, either at the plants where they are produced or by the consumer. They will stand rough handling and piling in an irregular manner. Our class of material will not, because it is fragile, porous and easily broken. It absorbs large quantities of water rapidly and wet fire brick subjected to freezing lose their refractory value.

We do not believe any consumer can exercise too much care of fire brick purchased by him. A direct waste is eliminated by such care and vast sums of money may be saved by increasing the life of the linings. We cannot refrain from directing your attention to the following important suggestions in regard to this matter:

1. We urge that careful workmen be intrusted with the duty of unloading the brick from the cars; that the brick be handled separately and wheeled from the cars instead of being thrown out promiscuously or through a plank chute; that the brick be piled in regular stacks just as carefully as possible and in a systematic manner. All of this will avoid loss by breakage and damage to the corners of the brick. This is economy.

2. We urge that you provide a shelter in which to "house" these brick. Be sure that the floor is dry and if possible have it paved or planked. Be sure that the building is enclosed and, by all means, that you have a first class roof on same. Never allow rain or moisture to reach them under any conditions.

3. Be sure that the fire clay mortar you use is not inferior to the quality of the brick and furthermore that your mason uses nothing but this fire clay "mix." Inexperienced masons may be inclined to use sand, cement, lime and many of them are tempted to use salt, especially in cold weather, in the mortar they prepare. Any of these will prove disastrous and should never be used. Pulverized fire clay, properly soaked in water, is the bond to use in laying fire brick. Nothing else is necessary, but be sure that the quality of fire clay is equal to or better than the quality of the brick. Otherwise your lining will last just as long as the "weakest link in the chain." The fire clay should be soaked in water, sufficiently long to make it plastic and to allow the mason to lay the brick with the thinnest possible joint of mortar.

4. "Good Bricklayers" may not always be "Good Fire Masons." There is a vast difference and unless a man is experienced in laying fire brick, he may prove to be very expensive. In ordinary brick work all kinds of joints are required, depending entirely on the idea of the architect or the

(Continued on page 536)

THE PASSING OF THE TRADITIONAL CLAY CONVENTION.

Pros and Cons of the Importance of Trade Associations. A Refutation of the Fallacious Statement that Educational Organizations Are No Longer Essential.

TIS SAID half a truth is worse than an outright falsehood in that it is more misleading. An editorial under the caption, "The Passing of the Traditional Clay Convention," in a recent issue of a contemporary of The Clay-Worker contains an element of truth and an appearance of reason that makes it dangerous, if not really harmful, to the best interests of the clay industries. Because it is misleading, containing a part truth, it may be well for those who have the welfare of the clay craft at heart to consider the theme in all its bearings that wise policies may prevail and proper action be taken to promote the highest welfare, etc., * * * and insure the greatest progress of the arts in which the readers of The Clay-Worker are engaged. Such discussion is pertinent at this time, when an effort is being made to increase the membership of the N. B: M. A., an educational organization that is still holding "traditional clay conventions."

Is such effort worth while? Or is it true that the clay product manufacturer "does not feel the pull to a convention that is purely educational in character?" Has the N. B. M. A. passed its period of usefulness, and has it no further reason for existence? Are we, as an organization, in a state of innocuous desuetude, or like that expressed by a colored woman that I heard of in the South? She was walking along the street in her best togs with a self-satisfied air, and when, passing the house of an acquaintance, a woman hollered out, "Why, Miz Johnson, where you gwine?" "I ain't gwine nowhar. I'se already done been where I'se gwine," she replied.

The N. B. M. A. started out 34 years ago to go somewhere, to accomplish a great good to the clay industries. Has it already been where it was going; has it accomplished the purposes of its organization, and should it now go out of existence? Such a view has been expressed many times in one way or another in the past few years, and mostly from the same sources. In fact, it has amounted almost to an insidious propaganda. I don't want to question any man's motives. Sometimes a man becomes unconscious of his motives, and statements which he made doubtfully at first, when oft repeated become to his mind unquestioned facts. A conscientious analysis of one's motives, however, sometimes reveals the fact that, like some substances handled by the chemist in his laboratory, the more they are analyzed the worse they smell. So in our discussion let's start right, questioning no man's motives and admitting that the subject is one upon which, as Plutarch said centuries ago, "Much can be said on both sides."

First. Let us consider the occasion that brought forth the editorial that has furnished the title of this article. The writer's logic, reduced to a syllogism, is as follows:

The Northwest Clay Association has disbanded because not enough manufacturers in the district would attend its annual meetings nor support it by keeping up their dues.

The Northwest Clay Association was purely an educational organization of clay products manufacturers.

Therefore, purely educational organizations of clay products manufacturers cannot exist under present conditions and are passing away—the clay trade paper, or specifically the one published "twenty-six times a year," is taking its place as an educator, and the purely commercial organizations "satisfy the clayworkers' hunger for sociability and fellowship."

The fallacy in such reasoning must be apparent to any analytical mind.

Years before the said trade paper came into existence there was in Ohio an organization of clay products manufacturers called the Ohio Brick, Tile and Drainage Association, a purely educational organization, of which the writer had the honor to be secretary about 30 years ago. Many years ago this association disbanded, and there were reasons for this, but no one concluded that hence educational organizations of clay products manufacturers could not exist and were passing away. As a matter of fact there are more educational organizations of clayworkers today than there were when the Ohio association disbanded, and the largest association of clayworkers today, the American Ceramic Society, is purely an educational organization.

The Northwest Association was never very strong. Its headquarters at Minneapolis was nearer the meeting places of the Iowa and Wisconsin associations than to many manufacturers, even in the State of Minnesota. Nebraska also has an association of her own and so has the Pacific Northwest, and brick plants in the Dakotas and Montana are few and far between and it is a long and expensive trip to Minneapolis. Moreover, at the time of year when the conventions were held the railroads were often blocked by snow storms. Therefore, the Northwest Association was maintained largely by the brick manufacturers and dealers of the Twin Cities and vicinity, and undoubtedly the more recently formed commercial organizations of these dealers and manufacturers did detract from the educational organization its strongest support.

Whether the Northwest Association should be revived or whether it should be reorganized as a Minnesota association, or whether the States of Iowa, Wisconsin and Minnesota should unite in forming a new Northwest Association, is debatable. Would it not be better if all state organizations be confined to commercial objects, since many of the questions to be considered are local, and that the educational organization be a national one, supported by all brick manufacturers of all the states? But more of this later. The question now before us is whether there should be any organization whatever of clay products manufacturers for educational purposes.

That the need for wider dissemination of reliable information concerning the most economical and efficient methods and processes of manufacture, that the need of scientific investigation of many of the problems involved in the manipulation of clays and the drying and burning of clay products, is great and is becoming more generally felt among old clayworkers as well as among the younger and better educated class, cannot be disputed. Now, then, how can these ends be best attained?

We all appreciate the great value of trade journals as disseminators of information and as educators, but we also recognize their limitations, from the fact that they are business enterprises, entered into by publishers for profit and are hence beyond the control of the industries they represent. For the most part they are managed by men of little or no practical experience in clay product manufacture, and with little or no technical knowledge of the ceramic arts. Therefore, even though they make a commendable effort to secure the most helpful articles, there is abundant evidence that the editors are not always able to judge of the value of matter presented to them. Moreover, as most of their revenue comes from advertisers, they must serve two masters, and it often appears that the interests of the manufacturers of clay products is sacrificed for fear of offending the advertisers. No complaint can be made of this, since we all know that the excellent journals we have would not be possible without the advertisers, and who would want a trade paper without advertisements?

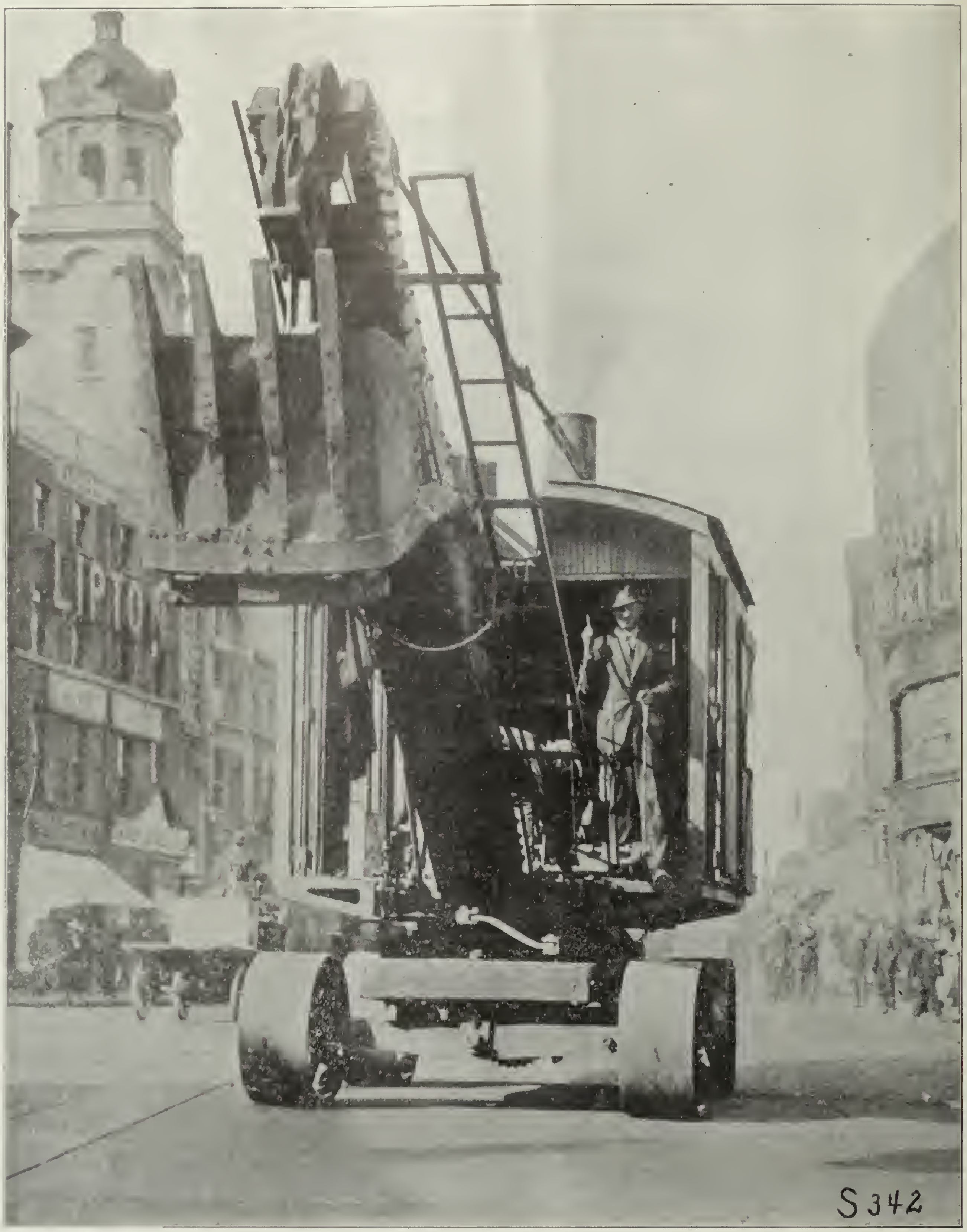
Also, while it is true that there are some good authorities who will, for a consideration, contribute to the trade journal who would not read a paper before a convention, especially with the limitations of time that are placed upon such papers, yet, on the other hand, we know that many of the best papers and addresses that we have had before our N. B. M. A. have come from men who would not otherwise give publicity to the knowledge they have acquired. Moreover, a properly directed meeting brings out in the discussion of these papers ideas and facts and figures from men who would never deliberately sit down and write for a trade paper. The reports of the annual conventions of the N. B. M. A. are full of historical and scientific facts and practical experience of great value to the clay industries that would never have been brought out by any other means. That the trade journals have made these contributions much more effective and influential is true, yet the credit must be given primarily to the educational organization.

A man who has not been for years in close touch with practical operations of clayware production cannot appreciate how many problems there are that can only be solved by scientific researches that are beyond the power of the individual manufacturer. Surely no trade journal could carry on such investigations. It is only by organized effort and support of the N. B. M. A. that it has been possible to carry on such work as has been done under the direction of the Committee on Technical Investigation. Many, in fact, probably most of the critics and detractors of the N. B. M. A. have never read the reports on these investigations and do not know that some facts and methods that are now common knowledge were first determined by elaborate experimentation by the Committee on Technical Investigation nor realize how beneficial this work has been to the industry nor how highly it has been valued by technical men the world over. The committee and the association have been fortunate in having had the labor and the guidance of such able and scientific men as Edward Orton, Jr., and A. V. Bleininger.

Much remains to be done, but for lack of money, due to the comparatively small number of brick manufacturers who give their support to the N. B. M. A., it has become increasingly difficult in these times to carry on the work. This and the demands of the war upon technical men has resulted in little having been done in the past few years. Can there be any thinking man among the manufacturers of America who does not believe that these investigations should be continued? Can there be any manufacturer of brick or allied products that has no interest in the advancement of the art to which he is devoting his time and energies and from which he derives a large part, if not all, of his income? Has anyone, be he manufacturer of clay products, a manufacturer of clayworking machinery or the editor or publisher of a trade journal, dependent for its existence upon the support of the clay industries, any plan by which this research work can be carried on except through the organization purely for educational purposes? And how can the interest in such organization be maintained except by annual conventions? Who can estimate the good to the industry that has been accomplished by these same "traditional clay conventions"?

Abundant testimony has been given, some of it published in our transactions and some in The Clay-Worker, and some not at all, of the great benefit that has been received by attendance at one or more N. B. M. A. conventions. The information gained through the discussions in session and lobby has meant to many a relief from some special manufacturing trouble and has in some cases turned failure into success.

Some who are boosting commercial organizations seem to think it necessary to decry the educational organization. There should be no antagonism nor even rivalry between the trade organization of brick manufacturers and the educational organization. I realize fully the importance of these trade organizations of manufacturers, of getting together to regulate price-cutting and selling methods and to promote, by advertising, a more extended use of their products. I have felt the necessity of such organization in face brick business and as president of the Ohio Face Brick Association for several years



Erie Steam Shovel, the First to Travel the Streets of London, Owned by F. D. Huntington, Ltd.

and as a promoter of the American Face Brick Association and a member of the board of directors and executive committee, took an active part in the development of such organizations. Yet I see clearly the importance and necessity of the purely educational organization. The educational association concerns itself with the making of a better product and making it at less cost, and surely is this not an effective means of promoting a more extended use of such products—one of the objects of the business association?

Every member of the Common Brick Manufacturers' Association, as well as every member of all organizations of brick manufacturers, ought to be a member of the N. B. M. A. Think of what could be accomplished with such support and then wonder how any brick manufacturer can refuse to contribute the paltry sum of $5 a year to this worthy object. Let the committee get to work and see that every brick manufacturer in the United States is bombarded with such facts and figures and arguments from which he cannot escape and with repeated solicitations until some definite answer is secured. A vigorous membership campaign ought to result in a membership by 1921 of not less than 2,000. No better missionary work for the structural clay products manufacturers can be conceived. W. D. RICHARDSON.

When an average contractor contemplates the advance in lumber these days he is not much inclined to find fault with brick and hollow tile prices.

BRITAIN ADOPTING AMERICAN EXCAVATING METHODS.

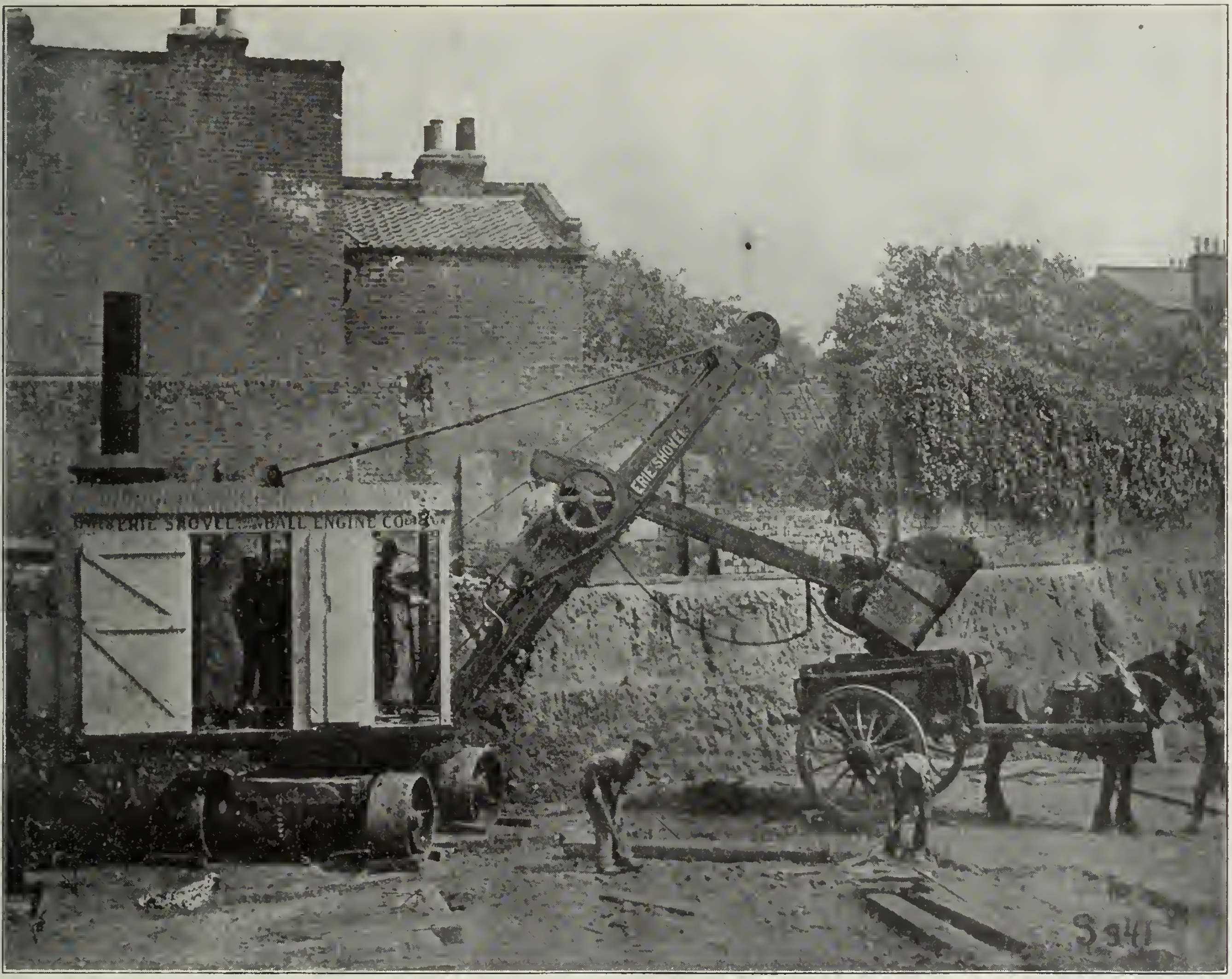
England's First Construction Excavation by Steam Shovel Handled by an "Erie," Built in United States.

The accompany photos show the first steam shovel ever used for building construction work in England—a Type "B" Erie.

This shovel is owned by F. D. Huntingdon, Ltd., engineers and contractors, 11 Hanover Square, London. The shovel is excavating for a chewing gum factory to be occupied by Adam & Beemans, Ltd., the British branch of the American Chicle Co. Because of the comparatively small amount of material to be handled the contractors thought at first that the use of a steam shovel was hardly warranted. But they were delighted with the results, both from the point of view of the speed with which the work was handled and the clean job done by the machine.

The output on this job was limited by the rate at which carts could be brought into position, and was far below the shovel's capacity. Even with this hindrance to contend with, F. D. Huntingdon, managing director of Huntingdon, Ltd., writes that, "This shovel has proved of inestimable value, cutting our excavating cost in half."

The first photo shows the first steam shovel that ever traveled the streets of London. It was viewed with astonish-



Type "B" Erie Shovel, the First Revolving Steam Shovel in England, Used in Excavating Site for Chewing Gum Factory of Adams & Beaman, Ltd.

ment, as London is 2,000 years old and had never before been disturbed by these monsters, which no longer attract attention in the United States.

There are twenty Eries, built at Erie, Pa., by the Ball Engine Company, at present digging their way into the confidence of British contractors and manufacturers, and more are on their way. These Erie shovels are being used by contractors, cement mills and brick manufacturers and are doing the work in far less time than has ever been accomplished by hand labor, at about one-third the cost.

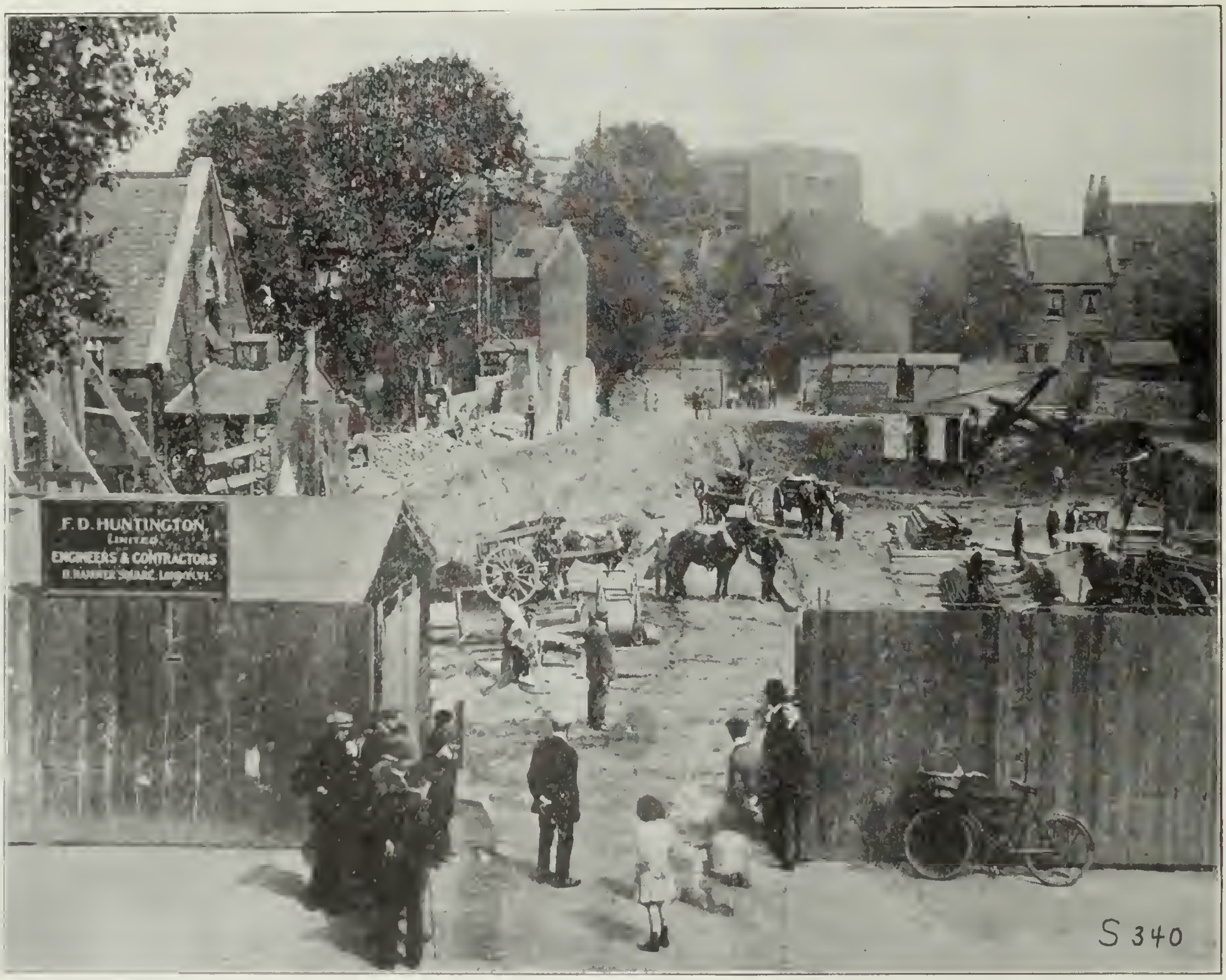
Steam shovels are not a new thing in England, but the British steam shovel is a heavy and cumbersome machine and is only suitable for the heaviest kind of digging. English labor conditions in the past have not warranted extensive use of excavating equipment. Manual labor has been cheap, and often more profitable than the heavy steam "navvies," as they are called. Then, too, the amount of excavating on most contracts has not been so large as to warrant the use of such heavy and expensive machinery.

A light 20-ton or 14-ton shovel, capable of traveling anywhere under its own power, has been absolutely unknown until the Eries entered the field. But recent developments in the labor conditions—the shortage of manual labor and the increase of wages—have prepared the market for an easily handled and reliable steam shovel. The Erie has met these requirements with satisfaction and profit to British contractors and manufacturers.

Written for The Clay-Worker.

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.

ALTHOUGH building operations in Milwaukee for the first three months of 1920 are double the amount for the same period in the previous year, the gain during March is not nearly as large as it was during February and January. There were 4,833 permits issued during the first quarter of 1920, representing a value of $3,820,048, compared with 2,516 permits, valued at $1,932,555 for the corresponding period of 1919. During March, 1920, 2,178 permits, valued at $1,663,408, were issued, as against 1,159 permits for buildings valued at $1,265,450 for the same month a year ago. During January and February 1920, there were 2,655 permits issued, valued at $2,157,640, compared with 1,357 permits, valued at $667,115, for the same months in 1919. This decline is looked at as the beginning of a policy of retrenchment on the part of building interests who are not starting new construction either because of the vast amount of work already started or because they find it unprofitable to make further investments in buildings under present price of material and labor conditions. However, what has always been termed as the building season has not really commenced in this territory. As soon as favorable spring weather becomes settled and outdoor activities resume, there will be a general revival



The First Cellar Excavation Ever Dug by a Steam Shovel in Any City in Great Britain. This Shovel, Type "B" Erie, Cut the Excavation Cost in Half.

of all forms of construction, including sewer, paving, drain and other work in which clay products are used. Construction activity during the winter and early spring was the result of the urgent necessity of particular buildings, while from now on the usual run of work will be taken up.

An idea of what some of the face and fancy brick dealers in Milwaukee are doing is revealed in the report given by a representative of Ricketson & Schwartz, listing a large number of building projects with the number of face brick required. Contracts have been awarded on the following: Central Continuation School, 1,400,000; Jonas Auto Service Building, 200,000; O. C. Hansen storage building, 300,000; Chain Belt Company addition, 500,000; Nunn-Bush shoe factory, 100,000; Edmonds shoe factory, 250,000; West Allis high school, 400,000; White Auto Company garage, 200,000; Milwaukee Coke and Gas Company addition, 200,000; O. N. Stein Company, 100,000; Benesh Bros. plant, 80,000; St. Ann's church, 250,000; Carmelite Sisters, Holy Hill 200,000; Wauwatosa church, 150,000; Layton Park State Bank, 75,000; Gridley Dairy Company addition, 100,000; Wisconsin Telephone Company, Kilbourn Exchange addition, 80,000; Hummel & Downing factory addition, 150,000; City sewage disposal plant, 600,000; Meisenheimer Printing Company 75,000; Palm Olive Soap addition, 100,000; United States warehouse, 150,000; Uihlein Food Products Company, new plant, 1,000,000; A. O. Smith addition, 1,000,000; Lakeside power plant, 750,000; Mt. Sinai Hospital addition, 200,000; George Ziegler Company candy factory, 225,000; Grand Avenue school, 350,000; Schuster Department Store addition, 225,000; Harley-Davidson Motor Company addition, 350,000.

The Wisconsin Face and Fire Brick Company, 114 Grand avenue, Milwaukee, has filed an amendment to its articles of incorporation increasing the capital stock from $30,000 to $50,000. The increase is made to provide additional capital to take care of the growth of the business.

The Northern Lumber and Supply Company, Wausau, Wis., has located a yard at Brantwood. A complete line of brick and other building material has been installed. The company operates at Tomahawk, Kennan, Gleason, Merrill, New London, Irma and Marion, in addition to the cities named.

The machinery of the abandoned brick plant at Galesville, Wis., has been purchased by F. G. Davis of Tarboro, N. C., who will ship the plant to some point in the South and establish a manufacturing plant. The machinery was purchased about 12 years ago by the Dale Brick Company, backed by local capital. Later it was taken over by Sesvold & Olson, who operated the plant for a while and then abandoned the project.

The Cook & Brown Lime Company of Oshkosh, Wis., has leased a sixty-acre tract of clay land from F. R. Carter at High Cliff. The firm intends to remove the clay from this land and then ship it by boat to Oshkosh, where it will be manufactured into brick. Buildings are now under construction for the use of laborers at the clay site.

The Kewaunee Clay Products Company, Kewaunee, Wis., has increased its capital stock from $15,000 to $50,000. The company has been busy all winter getting its plant into shape to commence operations early this spring, and has a large number of orders on hand for brick and tile. As soon as the required stock has been disposed of it is expected that the plant will be started. The directors of the concern are: C. Schmiers, Bob Trottman, R. J. McMahon, M. J. Rice, August Kuehl, Clarence Redding and F. J. Nepil.

Fire originating in the boiler room of the Ricketson Mineral Paint Works, Milwaukee, caused damage estimated at $3,000 recently. The fire was not of sufficient consequence to materially interfere with the production of the plant.

The Watertown Brick and Tile Company has been incorporated at Watertown, Wis., with $50,000 capital stock by Omar Gaston, C. T. Habhegger and C. A. Feist. The new firm is successor to the L. H. Cordes Company, clay products manufacturer, which was established in 1881 by L. H. Cordes and Joseph Terbrueggen, operating several yards. Since the death of Mr. Terbrueggen six years ago, Mr. Cordes continued the business. The affairs of the old company are now being closed and Mr. Cordes expects to retire May 1. The new owners have already taken active charge of the brick yards.

Negotiations are under way which may result in the sale or the reorganization of the Vesper Clay Products Company, at Vesper, near Grand Rapids, Wis. Milwaukee business men are said to be interested in the plant and contemplate either to buy the plant outright or invest in the present company, which will be considerably enlarged. The clay is reported to be of exceptional quality and if plans materialize about a quarter of a million dollars will be invested in buildings and equipment for the manufacture of brick and tile on a large scale.

A BADGER.

INSURANCE GIVEN TO EMPLOYES.

An insurance policy for the sum of five hundred dollars ($500.00) will be given entirely without cost to every employe of the Westinghouse Electric & Manufacturing Company who has been in the service of the company for a period of six months or more, according to a statement made by one of the officials of the company. The plan is effective March 1.

In addition, the employes, after April 1, may increase the value of their policies to amounts varying from $1,000 to $2,000, depending upon their length of service and continuity of savings.

All employes who have been in the company's service for six months or longer and who deposit a sum each pay day in the Employes' Savings Fund, equal to 2 per cent. or more of their earnings, will not only receive 4½ per cent. interest compounded semi-annually on such deposits, but in addition will automatically have their insurance increased to amounts up to $2,000, depending on the length of time they have been with the company.

For example, a man who has been in the service of the company for at least 15 years and has regularly deposited in the Employes' Saving Fund 2 per cent. or more of his salary, on which he regularly receives 4½ per cent. compound interest, is presented with an insurance policy in one of the established companies for the sum of $2,000, at no cost whatever to him.

After an employe has maintained the required deposits for a period of five years he may discontinue or withdraw his deposits from the savings fund without in any way affecting the value of his insurance policy.

In order to provide for cases where employes need some money and do not wish to disturb their savings and thus affect the value of their insurance policy, loans will be made by the company to the extent of 90 per cent of the amount to the credit of the employe in the savings fund without in any way affecting the value of the insurance.

This insurance is to be made effective at all of the various offices and plants of the Westinghouse Electric Company and will affect approximately 50,000 people.

KEEP THE GARDEN GOING.

Gardening is one of the good things that it is better to have an overdose of than not enough. The awakening of the garden spirit which came as a result of the war conditions did good beyond supplying the food stuff. The garden is properly a part of the home and the interest and exercise which comes from gardening are both wholesome. So let us keep it up and keep the gardens going.

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we again inaugurate a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

QUESTION: Will you kindly give me what information you have at hand on a kiln (other than a rotary kiln) for drying clay or bauxite? What is the best way to make Bauxite Brick and what are they selling at now? Where in the furnace are they best used?

Answer: Several attempts have been made to operate a calcining kiln after the manner of a continuously operated lime kiln but without success. The few shaft kilns in use are carefully filled, burned, cooled and drawn. A number of yards use ordinary down draft kilns for calcining, sometimes one of the brick burning kilns is used and elsewhere a special, but not unusual, down draft kiln is constructed for the calcining. A practically continuously operated kiln has been designed and the plan is a promising one but up to the present time none has been built and put in operation.

An excellent discussion of the calcining kilns will be found in one of the recent volumes of the Transactions of the American Ceramic Society—a paper by Prof. Harrop.

QUESTION: Please send me information as to what size brick should be made when molded to be (2¼ x 4 x 8) after burned? Also let me know whether (20%) is too much sand to mix when clay is very plastic?

Answer: The size of the green brick will depend entirely upon how much the clay, or mixture of clay and sand, shrinks in drying and burning. Some clays shrink very little in drying and actually swell in burning. The burned bricks are nearly or quite as large as the green bricks, and in some instances even larger. In the latter instance the green brick would have to be smaller than the required size in the burned product. A total shrinkage of 12% to 15% is not uncommon in workable clays and the green brick must be as much larger as the shrinkage reduces it in size. The first step is to determine the shrinkage of the clay—drying and burning. If this happens to be 10% then multiplying each of the dimensions by 100 and dividing by 90 will give the corresponding dimensions of the green brick. The length of the green brick in the dimensions given would, in this instance, be 8.9 inches.

It sounds very simple, but really it is quite a puzzling problem. In determining the shrinkages, the tests pieces may be softer or stiffer mud than the factory product will be and it will shrink more or less in consequence, or the burned test piece from which the shrinkage may be harder or softer than the kiln results with a corresponding difference in the final product. Then again the test determinations are made on a single piece which has been subjected to no weight in the burning, but the mass of bricks in the kiln is under considerable weight and the effect of this weight will be to increase the apparent shrinkage in one dimension and decrease it in another.

Finally we cannot get the same temperature in all parts of the kiln and some of the ware will be larger and some smaller. Shall we endeavor to have the harder ware the standard size and the softer ware larger, or vice versa.

There is one other question which should be taken into consideration. Ware under weight will burn at a lower temperature than ware not subjected to weight. Will the size of this ware, not considering the mechanical effect of the weight, be the same as an equally hard test burned at a higher temperature, and if not how much shall we allow for lower temperatures not knowing how much lower the temperatures?

Determining the exact proper size of green brick looks easy but we have not found it so.

The amount of sand to be added to a clay depends upon the plasticity and air shrinkage of the clay, or whatever the trouble to be overcome may be. Mixtures of 33% of sand are quite common in ordinary clay products.

QUESTION: 1—What is the smallest diameter of kiln that it is practical to build for small brick and tile plant?

2—How many does it take to operate a small plant where the men would be employed at the different jobs the year around?

3—What capitalization would a company have to have to start a small plant having a kiln and artificial dryer?

Answer: In order to answer the above questions intelligently and satisfactorily there are a few items of information that should be given.

First, one would want to know about how many brick and tile the local market would consume annually and whether the conditions are such that more distant markets could be entered. It is assumed, however, that the plant is desired solely for local market. Sometimes the local demand is overestimated or the quantity of brick that even a small plant will produce in a year when running constantly every working day is underestimated.

Another important item of information that one should have in calculating the number of men that are required to run a "small" brick plant and the capital that would be required, is the character of the raw material, whether a hard shale or a soft surface clay and how easily accessible it is and how rapidly it can be dried and burned without damage.

Still another condition that one should know in order to answer these questions is whether electric power can be purchased or whether a power plant must be installed and operated.

Without the information specified above, the questions can only be answered in a general way, or else too much time be required to assume the different conditions.

1—Small kilns require a larger investment per unit of product than large kilns, consume more fuel per unit of product and also carry a greater labor charge. However small the daily output, the kiln should not be so large that it cannot be filled in the six working days of the week. If a daily output of 10,000 brick is desired, the kiln should be about 26 ft. in diameter, a smaller kiln is not advisable for any capacity. If more than 10,000 brick a day are made the kiln may be any size that will meet the above condition. 26 ft. used to be the most common size of round kiln, but now few are built less than 30 ft. and 32 ft. is a common size and one often sees kilns 36 and even 40 ft. in diameter. For large plants the writer does not advise kilns less than 36 ft.

2—In order to answer this question we will assume that a "small" plant is one making 10,000 stiff-mud wire-cut brick a day, a quarter of a million a month or say 3 millions a year. In operating such a plant it is well to have the machinery of sufficient capacity that the 10,000 brick can be made in half a day and then for the other half of day the same gang of men can be employed in setting brick, emptying kilns and loading brick. In this way a small plant can give steady employment all day to its whole labor force.

For operating such a plant, assuming that a surface clay near at hand is used, the following crew of men would be required:

Two or three men at clay bank, loading cars, depending upon conditions.

One machine man or factory foreman to keep machinery in operation. He may also be the engineer.

Two off-bearers, loading dryer cars from belt.

Two burners, one for day and one for night.

One man for transferring brick to dryer and taking them out of dryer, and also firing dryer, if furnace dryer is used.

If there is a steam power plant another man will be required. So, say 10 men altogether, one man per thousand brick produced daily.

3—This question cannot be answered satisfactorily without knowing more of the conditions, but for a common brick plant, including drain and building tile, a capital of $40,000 to $50,000 should be had. Such a plant ought to pay 15% on an investment of $50,000.

QUESTION: Can you give me the name of a producer of yellow or blue clay such as is used by iron or steel foundries? I can sell about one hundred cars per year, if I can locate a supply.

Answer: We do not know of any special clay which is so designated. The furnaces use several varieties of plastic fire clay in daubing, repairing furnaces and general repair work, plugging iron and cinder notches, lining converters, etc.

These fire clays are "Yellow or Blue" but they vary in composition and character and the several furnaces buy the clays which they have found best suited to their needs.

There are some clays which are especially adapted to special work, but often the choice of a clay is only a matter of prejudice on the part of the foundry man. One will buy clays from one field and considers it decidedly the best, while another will use the clay from a different field and is equally certain that it is the only clay for the purpose, and yet the purpose in both instances may be identical. To enter this market for clays one must first select the clays which will meet the several purposes; and second the foundry man must be convinced that they are the equal of the clays he has been using.

Purchasing agents who are largely governed by the price are often easy marks, but they and the foundry men work together about as harmoniously as a fat gander and a guinea fowl.

QUESTION: I am constructing some additional up draft clamp kilns, eighteen feet wide, inside diameter, with thirty-four to thirty-six brick height, with a view to burning coal as fuel in place of wood. Will you kindly advise the best type of furnace box, size, depth and heighth?

The brick are made by the stiff mud, end cut process and the clay is exceptionally plastic, being practically free from sand or top loam.

Have had some trouble with the brick "shivvering" and have come to the conclusion that this action results from too early increase of the heat immediately after water-smoking. Would appreciate any information you might offer in this respect.

Answer: Relative to a furnace for an up-draft kiln, the proper method is to have the furnace plans worked out by an engineer or experienced kiln builder. The size of the furnace and furnace ports will then be properly proportioned. In many up draft kilns two eyes are connected with one furnace on each side. The furnace will be 30 inches to 36 inches wide, and 42 inches to 48 inches long inside, depending upon the character of the fuel, and a height of about 30 inches above the grate bars. The ports into the arches should be not larger than 8 inches to 10 inches, although there is wide difference of opinion in this respect. We have seen kilns with ports as small as 6 inches square and others as large as 15 inches by 24 inches or in other words the full size of the furnace where the furnaces were single.

Many kilns are built with individual furnaces for each arch, and the width is that of the arch, about 15 inches. The grate bars are 24 inches up to eight or more feet in length, and in the use of such long bars they extend nearly to the center of the kiln. Thirty to 36 inches is ample length for an outside furnace, and a height of 24 inches answers for such single furnaces. Ash pits should be not less than 18 inches deep, otherwise there is danger of burning the grate bars when the hot ashes get too close to the bars.

Written for THE CLAY-WORKER.

CINCINNATI.

THE PRESENT IS by no means a flattering one here in the building field. The agitation caused by the very high cost of both materials and labor has been so marked that there is more than a hesitation on the part of the prospective builders to take active steps. The large majority of this class has simply given up the question of building at this time and it is also said that the architects are advising their clients to wait. This applies to the home building aspect, as the factory work has been going along very well, there being at least something in this way that is being done.

As far as apartment houses and homes are concerned, the present outlook is very unfavorable. While there have been numerous apartment buildings planned, none of any consequence have been begun. According to George Hauser, building commissioner, there has been but one permit issued for the building of a house costing $3,500, this being the cheapest house to be undertaken in this city for the present year. Few of the builders are undertaking to build homes for the market, simply confining their efforts to contracts direct from the owners on the 10 per cent. plus plan. There is a hesitation on the part of the contractors to undertake any work of any consequence while the situation is so demoralized.

In discussing the situation one builder says: "The renter cannot look forward to any relief so long as the wages of labor and the price of material is on the upward trend. The finished house is worthy a stated income just as well as the demand of those whose energies enter into its construction. The cost of building must come out of the rent, and when any branch of labor secures an increase this is added to the cost of the improvement. Somebody has to pay it."

One of the serious drawbacks to the building situation here is a strike among the union carpenters, which has been on for some weeks, and which has held up all the large work, and doubtless many of the lesser contracts. There has been a demand made for $1.25 per hour until the first of May, and then $1.35 is asked. A tentative raise to 90 cents was offered, but this was refused. A meeting has been held with all trades and contractors being present, and a committee appointed to see what could be done to bring about an agreement, but at this writing nothing has been accomplished. The fact that so much work has been tied up is one of the very unpleasant and very costly effects of this "vacation" as the carpenters have styled it. If this continues much longer it will make a very bad mess of things that are not as pleasing now as they might be.

The total number of permits issued here during March was slightly more than for the same month a year ago, and the total value of the improvements was about $500,000 more this year than last. The permits for March, 1920, were 1,113, costing $803,290, and for the previous year they numbered 1,010, costing $354,805.

The Reading Road Corporation, a new organization, will build an apartment building at the northeast corner of Reading road and Shillito street. The capital stock of the company is $450.000. The company expects to build a group of these structures if the cost of the improvements will permit a rent being charged that will allow a profit to the bondholders.

The Riding Club of Cincinnati has assigned Architect James Gilmore to prepare plans for the construction of a new clubhouse for the use of the club at the northeast corner of Reading road and Asmann avenue. It will be of Swiss style of architecture. A number of features will be incorporated in the structure.

A branch plant of the American Can Company, New York, will be built at the northwest corner of Spring Grove avenue and Fergus street, North Side. The improvement, including equipment, will cost in the neighborhood of $1,000,000 or thereabouts.

The Linde Air Products Company will build a branch Prest-O-Lite plant here on a tract of land five acres in size along the Norfolk & Western railroad, in Bond Hill. The company will spend about $150,000 in buildings and eequipment, it is said.

A group of buildings comprising about 300,000 square feet of floor space will comprise the initial group of buildings to be erected by the Standard Silicate Company, a new corporation, to be built at the northwest corner of Paddock road and the B. & O. S. W. railroad, Bond Hill, the property being recently acquired for the purpose. The buildings will be of brick, concrete and steel construction.

The common brick situation here is very fair. The winter being over, the plants that have been shut down for the winter months will begin operations soon, the reports indicate. One plant is now in operation. The demand has been very fair, but the output not being large, has not really been a test of the condition in this way. There is not much inclination to make contracts ahead for brick, as the situation is now so unsettled. The prices will be made most likely based on the prevailing price at the time of shipment.

The demand for face brick is naturally slow, as the building of homes and apartments has been held up to a great extent. The reports show that there has been very little activity in this way. Then the car shortage is a serious matter in the movement of clay products and the situation generally is not very flattering now. Other lines of clay products are reported as moving fair, but not at all of a rush nature.

The Cincinnati Clay Products Company has leased wharfage space at the foot of Race street at an annual rental of $720. This will permit the company to unload its brick from barges that are shipped from the plant, one barge having thus far been shipped. It is not a very flattering report that is heard at the company's office on account of the high cost of materials and the carpenters' strike.

The Builders' Material Company say that the situation has been dull and the indications are not as promising as they might be at this time, but the general situation is unfavorable for building operations.

The Evans Builders' Company report the demand for clay products to be fair, but say that the car situation is serious and that this has been noted at the plant. The general trade outlook is not as promising as it could be at this time.

The Wm. E. Dee Mfg. Company notes that the demand for clay products is about as good as it can be now and there is nothing to find fault with under the circumstances.

In an opinion handed down by United States District Judge John W. Peck an Injunction is awarded to the plaintiff in the suit of the Portsmouth Refractories Company vs. Harbison-Walker Refractories Company, restraining the defendant company from carrying on any mining operations over and above plaintiff's mines in Lawrence county, Ohio, or from working or operating coal or clay mines anywhere within the region laid off and surveyed by the plaintiff for its mining operations. The injunction, however, does not prevent the defendant from hauling over the surface in this territory, or from working the region west of plaintiff's Mine No. 1.

The defendant is enjoined further from interfering with the plaintiff's supplying itself with fire clay and coal from the lands in question for the reasonable requirements of its business, reserving to the defendant the right to contemporaneously work the lands. Costs are assessed against the defendant.

CINCY.

RECENT PATENTS IN THE CLAYWORKING INDUSTRY.

[Full description and specifications of the following patents may be had by addressing **The Commissioner of Patents, Washington, D. C.**, and enclosing ten cents for each patent wanted. In ordering, give number of patent only.]

No. 1,327,292. Brick Wall Construction. Alonzo C. Raymond, Detroit, Mich., patentee.

A patent granted for a method of constructing fireproof brick partitions, comprising the vertical placing of a metal stud having channels and anchored at top and bottom when so placed, the insertion of a tier of bricks having vertical ribs on their ends, the placing of a second metal stud with a channel portion engaging the ribs on the free ends of the bricks, each stud being anchored in the floor and ceiling, and the repeating of such operation as needed.

No. 1,329,893. Brick Wall Construction. Dennis J. Flynn, New Brunswick, N. J., patentee.

A wall construction comprising inner and outer wall sections spaced apart to provide a dead air space between them, each section being formed of hollow building bricks or blocks provided at the inner faces with vertically disposed dovetail grooves, of which the dovetail grooves of the blocks of the inner wall section are in register with the dovetail grooves in the blocks of the outer wall section, and tying plates, one for each pair of oppositely disposed building bricks of the outer and inner sections, each tying plate terminating at its sides in dovetail tongues.

No. 1,334,600. Building Construction. Charles V. Eades, Chicago, Ill., patentee.

A composite wall consisting of perforated brick superposed to form parallel rows spaced slightly apart, vertical and horizontal reinforce rods in the interval between rows, lugs secured at one end to the inner faces of the bricks and curved at the free end to engage opposite sides of the reinforce rods.

No. 1,334,599. Building Blocks. Wilfred L. Cusick, Follansbee, W. Va., patentee.

In a wall, hollow bricks or blocks disposed in superposed tiers, each block having a bead overlapping the face of the block in the next tier, an upright longitudinal partition producing an air space along the rear of the block and a socket just in rear of the facing wall and a solid dowel engaging blocks which abut end to end.

No. 1,338,868. Refractory Brick Construction. Jesse C. Martin, Jr., San Francisco, Cal., patentee.

A hollow refractory brick constructed of unit members positioned by and extended rearwardly of the refractory front wall thereof and held in place therein by the bottom refractory floor whereby an air passage is provided through the brick, especially adaptable for refractory lined locomotive fire boxes and the like.

No. 1,328,367. Device for Making Multicolored Tiles and the Like. Antonio Cotoli, Havana, Cuba, patentee.

Patent covers a device as named in combination with a mold having a plurality of compartments of varying design, a plate provided with a plurality of circular openings distributed over a predetermined area of said plate, nozzles projecting selectively through certain of said openings into some of said compartments, the nozzles having mouthpieces of different shape at one end and having circular cross section at the other and paint supply tubes attached to said circular end portions.

No. 1,334,301. Method of Staining Glazed Ceramic Ware. John W. Hasburg, Chicago, Ill., patentee.

This patent is for a process of coloring glazed ceramic ware in which the glaze is unsuitable for fire staining, which consists in first firing or burning thereon a secondary glaze adapted to be stained and then staining the secondary glaze.

No. 1,335,168. Ceramic Article and Method of Making Same. Walter Wilhelm Horn, Teplitz, Austria, patentee. Patent assigned to The Chemical Foundation, Inc., New York, N. Y.

A refractory ceramic material capable of withstanding changes in temperature between 20 and 120 degrees C., said material containing plastic fire clay, pulverized chamotte and lean kaolin, being free from fragments of quartz and feldspar and substantially free from alkalis and alkaline earths.

No. 1,327,448. Process for Making a Refractory Plastic. Edward R. Stowell, Oden, Mich., patentee.

Patent covering a process for making a refractory plastic consisting in treating silicon carbid containing free silicon with a caustic alkali solution to generate hydrogen, and after the evolution of hydrogen has ceased stirring the mass down to original volume.

No. 1,327,758. Refractory Material. Edward D. Frohman, Pittsburgh, Pa., patentee.

This patent is for a refractory material which consists of a mixture of finely divided fire clay, silicious material and sulfite pitch.

No. 1,326,384. Process for Extraction of Alumina from Clay. Harry G. Wildman, Montreal, Canada, patentee.

Patent awarded for a process for separating alumina from clay, which consists in first rendering the alumina of clay soluble, and then dissolving the alumina in the presence of sulfurous anhydrid.

No. 1,328,380. Refractory Lining. Wilbur G. Laird, New York, N. Y., patentee. Patent assigned to H. L. Doherty, New York, N. Y.

Patent for a refractory lining comprising a heat-resisting backing and a non-fluxing refractory facing secured to said backing consisting of refractory locking blocks embedded in said backing and thin refractory plates held by said blocks.

No. 1,326,756. Pulldown for Potteries. George Lowry, Roseville, Ohio, patentee. Half interest assigned to J. F. Tanner, Roseville, Ohio.

Patent for a device named, having a bench and a potters' wheel carried thereby, a vertical shaft pivotally mounted on the bench, laterally projecting arms mounted on the shaft, a shoe arm, the said laterally projecting arms having their free ends bifurcated and carrying anti-friction rollers in the bifurcations, the shoe arm being guided by the said bifurcated ends.

No. 1,334,892. Method for Setting Brick Mechanically in Spaced Regular Relation, as in Kilns and the Like. William W. Dickinson, Jr., Little Rock, Ark., patentee.

Patent for a supporting device adapted to receive a plurality of laterally spaced rows of longitudinally abutting brick, means for transporting the supporting device from point to point and for presenting it above a receiving surface, means for inclining the supporting device in the direction of the rows of brick while so presented above such surface, means for moving said supporting device bodily along such surface while so inclined, and means carried by the supporting device to guide each row of bricks during the discharging operation.

No. 1,335,071. Brick Machine. Oliver J. Moussette, Brooklyn, N. Y., patentee.

In a brick machine the combination of a mold formed with a vertically extending mold cavity open at both ends, a slide mounted on the mold to travel therewith and adapted to close the bottom of the mold cavity and support the material in the mold, means working above and below the mold to compress material against the slide, means for moving the slide laterally to uncover the bottom of the mold cavity during a portion of the travel of the mold and permit discharge of the compressed material.

No. 1,335,344. Brick Handling and Setting Apparatus. Grafton E. Luce, Chicago, Ill., patentee.

Brick handling and setting apparatus of the kind described, having brick carrying devices, power actuated means to remove the brick carrying devices from a unit stack of brick during unloading, a movable overhead support and mechanism to automatically operate and control the travel of said support in timed relation with a power actuated unloading means.

No. 1,335,384. Porcelain-Faced Brick. George T. Meyers, Swissvale, Pa., patentee.

A brick or block comprising a facing having a plurality of projections thereon, a body of plastic material interlocking with the projections and yielding means surrounding the projections to allow for unequal transverse and longitudinal expansion and contraction of the facing and body.

No. 1,329,745. Tunnel Kiln. George H. Benjamin, New York, N. Y., patentee.

Patent awarded for a tunnel oven comprising a main chamber a plurality of structurally independent heating chambers arranged longitudinally in line on each side of the main chamber, an air flue situated behind each chamber, an air flue situated in front of each chamber, together with means for moving such screens to and from the chamber in front of which they are individually placed.

No. 1,329,830. Kiln. John Elcock, Columbus, Ga., patentee.

Patent for a circular kiln with regularly spaced chimneys erected in the wall thereof regularly spaced flash walls within the kiln, fire boxes opening at their inner ends into the flash walls to deliver fuel thereto, parallel communicating channels in the floor of the kiln adjacent the center thereof, and smoke flues in the floor connecting the channels to the chimneys.

Trade-Marks and Designs Patented.

No. 122,657. Construction Materials. Pyro Products Co., Chicago, Ill. Use of name "Pyro-Paste" for fire brick.

No. 128,345. Fire Bricks and Tile Made from Fire Clay. Crescent Refractories Co., Curwensville, Pa.

No. 127,914. Brick and Tile Manufactured from Fire Clay. Clearfield Clay Working Company, Clearfield, Pa.

No. 114,648. Construction Materials. Quigley Furnace Specialties Co., Inc., New York, N. Y.
Use of name "Insulbrix" for refractory brick.

ALFRED T. MARKS.

It is local figures on comparative cost which will count for most in the building in the game, but just the same the general average figures of the country are interesting and worth while. They show a range of percentage in difference between brick and other material ranging from nothing to about 10 per cent., which means that the brick wall is the better buy in the long run even where the brick cost is higher.

The Hazleton (Pa.) Brick Works recently received an order from the Walter Gaple Co., a large New York construction firm, for 1,300,000 bricks, shipment to be made immediately. The order will keep the plant in full operation the rest of the winter, according to H. L. Campbell, manager. The works will be enlarged in the spring.

OF INTEREST TO DRAIN TILE MANUFACTURERS

A LABOR-SAVING DEVICE FOR SETTING TILE IN KILN.

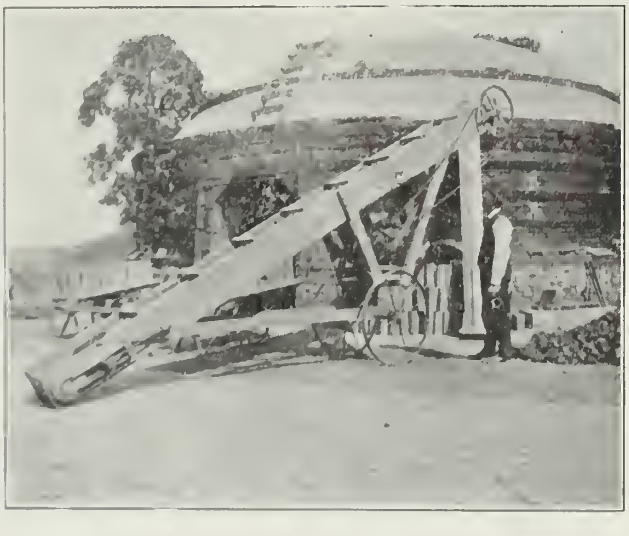
NECESSITY, THE MOTHER of invention, is working overtime these days, giving to the clay plant owners many valuable labor-saving devices. The scarcify of labor turned the attention of the manufacturers to almost every crook and turn in the business, seeking out ways and means of saving time, labor and money. As a result of the close application to details not considered important in the past, new methods are being employed with a great economical result. Labor-saving devices are employed that reduce to the minimum the human element required. These are better days in the successful operation of plants, because of the need of closer attention to details. As a result the business of manufacturing of clay products is being placed on a better, sounder and more economical basis and necessity has awakened the manufacturers out of their former lethargy, so that today the business has become more automatic from beginning to end.

We wish to bring to the attention of the drain tile manufacturers a labor-saving device being used most successfully on a number of plants. This is a portable conveyor for setting tile in the kiln. The pictures shown herewith were taken on the plant of George M. Fries, Connersville, Ind., a successful drain tile manufacturer and President of the Indiana Drain Tile Manufacturers' Association.

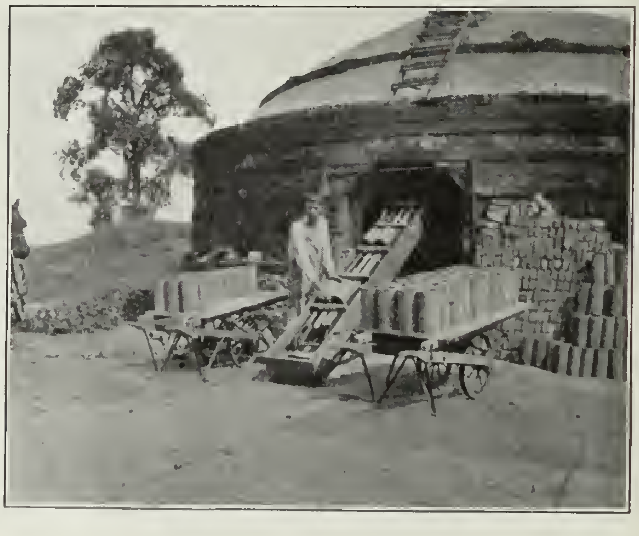
This labor-saving device consists of a series of flights on sprocket chains, the flights being spaced to suit the size of tile to be set. In setting small tile the flights are 24 inches apart and tile are placed on every other flight, the conveyor running at a speed of 60 feet per minute. A one-horse power motor is used in furnishing power.

Five courses of tile are set in the kiln before the conveyor is used, after this is accomplished the end of the conveyor is pushed through the door of the kiln to the point desired and the tile are set in rapid succession. Three courses of tile are set on top of the five first courses, then the conveyor is raised to height needed. The conveyor will deliver to a point nine feet above floor of kiln. When the back of kiln is filled the conveyor is drawn out of kiln the distance required and lowered and raised as position in kiln makes it necessary.

In commenting on this labor-saving device, Mr. Fries stated that he would not do without the conveyor, that it saved him two men and five hours in the setting, requiring little power and making the working conditions for the men more



Conveyor for Elevating Tile Into Kiln.



Tile Conveyor in Operation.

desirable since it absolutely eliminates lifting and tossing. The machine paid for itself in three months.

In setting a forty-foot kiln, in the old way four men, working two days, were required to set by hand. With the conveyor, only two men are required and the setting time is shortened five hours. With wages ranging from 35 to 40 cents an hour and even higher in many plants, the saving in this department amounts to considerable in the course of the year. Figuring at the minimum of 35 cents an hour, eight-hour day, the saving on this machine in labor alone would be $5.60. But remember five hours are saved in setting by machine with only two men, for formerly it required four men, two full days in the setting, so that added to this amount should be the cost in labor of four men for five hours every other day at $3.50 per day, making total daily saving of $9.10, to say nothing of value of quicker work and better working conditions for the men.

On the average plant which shuts down four months during the year, the saving would amount to considerable over $1,400, figuring a liberal amount for power which is inappreciable. This means clear profit with a much improved labor condition. This is taking only into consideration the use of one conveyor. On larger plants where several kilns are set daily and extra conveyors are used, the saving will be proportionately greater.

It is labor-saving devices of this kind that we wish to bring more forcibly to the attention of the clay products manufacturers of the land, for in the adoption of these labor-saving methods, the business in general can be placed on a more thriving and profitable basis with less dependence on the human element, so burdensome and vexatious to the plant owners and operators today.

If you have devices and methods that are helping you to solve the labor problems, give your fellow clay crafters the benefit and so help the business in general. The demand for clay products is so great and the supply so limited, that we can well afford to help the other fellow by being liberal. The other fellow may have something you have not as yet heard of. An interchange of ideas will be mutually beneficial. The manufacturer who is so well satisfied with his own plant that he cannot see any opportunity of improvement has reached a point dangerous to himself in the backsliding ways self-satisfaction generally institutes.

The columns of The Clay-Worker are gladly thrown open to detailed articles that will be helpful to the trade in general. Give others the benefit of your experiences and in this manner co-operation will spell unbounded prosperity to the trade as a whole.

CONCERNING THE MIDDLE MAN.

Quite a lot of pro and con argument is going the rounds these days about why we can or cannot eliminate the middleman or the dealer who represents the merchandising element between the other elements of production and consumption. Arguments are interesting until they become tiresome, and anyway, it is the middleman himself who will either eliminate or justify himself, depending on how he conducts his business and whether or not he renders actual service worth what it costs. In the brick business the good dealers have contributed largely to the development of the selling end, and those who continue to do this will make and hold a place for themselves, while those who neglect it will fall behind and drop out.

Keeping up with the procession is a good enough motto for the piker, but leading the procession is a better motto for the really progressive man.

CLAY TILE FOR FARM DRAINAGE MEANS BETTER RESULTS AND BIGGER RETURNS.

In Dry Seasons or Wet, Tile Drains Prove Beneficial—Tests for Quality of Pipe.

DURING the last five years we have obtained some very interesting, as well as educating, figures on the benefits received from tile draining. From September, 1913, to August, 1914, the precipitation was the smallest for any similar period, yet in spite of this the drained portion of our demonstration plots gave an average return of $14.12 per acre more than the undrained portion. This is very striking proof of the claim that drainage is quite beneficial during the dry season.

The year 1915 was perhaps the most favorable for undrained land of any we have had in the last five years. The spring was fairly dry, moderate rains followed during the growing season, and sufficient during the ripening period for proper filling. Yet in spite of this the average returns from fourteen demonstration plots, show a difference of $4.48 in favor of the drained land. Allowing for a cost of $40 per acre for tiling, this would be a return of a little over 11 per cent. on the money invested.

It is not necessary to mention the returns in the wet years of 1916 and 1917. Tile in many cases meant the difference between no crop and a good crop. The tile, and expense of tiling were paid for many times, but the fellow without tile suffered severely.

The farmer has learned or is learning his lesson either by experience of other people or through sad experiences of his own, and the result is that we have today a demand for tile that cannot be met or at least is not being met, and in this business as with any other, the demand has not helped to improve the quality of the product.

The tiling industry might be spoken of as being in its infancy. It has been estimated that one-third of the cleared land of Ontario, or about 5,000,000 acres is in urgent need of drainage, while much more would be greatly benefited. Then there are large areas of swamps and marsh, which might be reclaimed—probably about a quarter of a million acres. These figures refer to old Ontario. Much of the clay belt of New Ontario will require drainage before it will produce to its full capacity. In Quebec and the Maritime Provinces, where there is considerable more rainfall than in Ontario much drainage is needed. Consequently, there is bound to be a growing demand for the manufacture of land tile.

Quality to Be Determined.

One of the questions with which we are confronted is the quality of the tile that is being made. We hope to do some testing in an endeavor to find out something of the quality of the tile turned out. So far as I can find out there has been nothing done in this country along this line, and our methods and equipment may be somewhat crude, but with experience these will improve.

Using the United States standard of specifications as a basis I would like to give briefly an outline of the work I would like to see undertaken. The tests would be three in number: Strength, absorption and freezing and thawing, and these tests would apply to concrete as well as clay. It is possible that they are more necessary in the former than in the latter.

(a) Strength Tests of Drain Tile.

1. Specimens to be broken and full size. 2. Walls as thoroughly wet as will result from being completely covered

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By F. L. Ferguson, B. S. A., of Ontario Agricultural College, Guelph, Ont.

with some absorbent material, which has been kept dampened for not less than twelve hours. 3. Specimens must be kept at a temperature not lower than 40 deg. F. until tested. 4. Each specimen shall be weighed just prior to testing and weights reported. 5. Sand bearings, hydraulic bearings or three point bearings may be used. 6. The result shall be expressed in pounds and per linear foot, for five individual specimens, together with the average.

(b) Absorption Tests for Drain Tile.

Specimens.

1. Three specimens shall be taken from each of the five tiles broken, one from each end and one from the middle.

Each specimen shall be from 12-20 square inch in area measured on the convex side, and shall be as nearly square as the material will permit. Each specimen shall be sound, solid, free from cracks, fissures of shattered edges, and shall be marked as to permit identity at any stage of the test.

Drying Specimens.

2. All specimens shall be weighed to the nearest gram.

They shall then be dried in an oven at not less than 110 deg. (230 deg F.), for not less than three hours.

When removed they shall be cooled to 20-25 deg. C. (68-77 deg. F.) and reweighed.

If the weight does not check closely on the first, they shall be placed in the drier for two hours and reweighed. This must be repeated until the weights check.

3. Specimens shall be placed in a suitable woven-wire receptacle, packed tightly enough to prevent jostling, covered with distilled or rainwater raised to the boiling point and boiled for five hours, and cooled in water to a temperature of 10-15 deg. C. (50-59 deg. F.).

4. The results shall be calculated as percentages of the initial dry weight,—to the first decimal place. Each individual specimen shall be reported separately, together with the mean of the fifteen or more specimens comprising the sample, the maximum and the minimum single observations entering into the mean, and the variation between the maximum and the minimum of the three specimens of each tile represented in the standard sample.

(c) Freezing and Thawing Tests of Drain Tile.

1. The test specimens used in the absorption test shall be used for the freezing and thawing tests, or other specimens shall be prepared in the same way, taking the same precautions in selection, drying, immersing, boiling and cooling.

2. Specimens shall be kept immersed until this test is commenced. They shall be placed in metal trays with concave side upwards, and immersed in ice water until the specimens have attained substantially the temperature of the water, after which the water shall be drawn down to a depth of one-half inch in each tray. The trays are then placed in a freezing apparatus.

Freezing must be performed in a quiet atmosphere free from natural or artificial currents. The temperature shall be reduced to 10 deg. C. (14 deg. F.) or below within thirty minutes after the introduction of the specimens. The temperature shall not fall lower than 20 deg. C. (4 deg. F.). The freezing shall be continued until the water in the trays is frozen solid.

At the conclusion of the freezing, the specimens shall be withdrawn, and at once immersed in water at a temperature of 85-100 deg. C. (185-212 deg. F.). Heating shall be continued so that the water will regain the required temperature as soon as practicable, after the specimens are immersed. This shall be maintained for not less than 15 minutes.

The specimens shall then be cooled rapidly in water at 10 to 15 deg. C. (50-59 deg. F.), and then inspected.

3. Failure under the freezing and thawing treatment shall be considered to be reached when:

(a) The specimens show superficial disintegration or spalling, with loss of weight of more than 5 per cent of the initial dry weight, or,

(b) The specimens are badly cracked in other than lamination planes, or,

(c) The specimens show evident serious loss of structural strength.

NEW CHICAGO DISTRICT MANAGER FOR THE BROWN INSTRUMENT COMPANY.

MR. C. C. McDERMOTT has assumed charge of the Chicago office of the Brown Instrument Company of Philadelphia, succeeding J. W. Lazear, who recently resigned to take up other work in New York. Mr. McDermott has been transferred from the Philadelphia office, where he has been district manager for some time.

C. C. McDermott, Chicago Representative Brown Instrument Company.

Previous to his connection with the Brown Instrument Company Mr. McDermott was for many years on the staff of Lord & Burnham of New York. From New York he went to the Boston office of the company for two years, was their Canadian sales manager for three years and later manager of their Philadelphia office.

In addition to an exceptionally broad experience and insight into industrial conditions, Mr. McDermott has had the advantage of studying pyrometers, thermometers, pressure gauges and other Brown instruments right in the Philadelphia laboratories of the Brown Instrument Company and he is admirably equipped to interpret and serve the needs of the Chicago territory. His pleasing personality and thoroughly frank, sunny way of doing things can but bespeak him a hearty welcome from the Brown Instrument Company's many friends.

CLAYWORKING IN EAST AFRICA.

A recent report from Consul S. W. Eells, from Nairobi, British East Africa, tells of the starting up there of the plant of the Nairobi Brick, Tile and Pipe Works. The plant is equipped to turn out one-half million brick monthly and a 100,000 roofing tiles.

PACIFIC COAST NEWS.

The NEW AGREEMENT between the San Francisco Building Trades Council and the Building Industrial Association, which went into effect April 1, is being watched with much interest among the clay and brick manufacturers to see just what effect it will have on the demand for their products. The agreement provides for all controversies and disputes that arise between employer and employes to be settled by arbitration and mediation without cessation of work, and all contracts must be finished under the conditions and wage scale maintained at the time the contracts were let. However, if living conditions or any other conditions necessitate a change in wages, such changes as are deemed necessary will be made by the consent of both parties concerned. This agreement will no doubt relieve much of the trouble due in the past to strikes and lockouts and increase the demand for all building materials.

If the agreement causes a larger demand for brick than there is already the brick manufacturers will be forced to give up the hope of ever catching up with the demand. At the present time the brick industry about the San Francisco Bay region is suffering from a shortage of production. The demand so far exceeds the supply that the construction men are forced to wait in line for their supply. This shortage of supply is caused more from the under-production than from the excess of business.

The cause of this under-production is due to the shortage of satisfactory laborers to carry on the brick industry. Under the present labor conditions it is impossible for the brick manufacturers to predict what the output of brick will be in this section for the year 1920.

During the past twenty years about 90 per cent. of the California brickyard laborers were Italians; today there are only about 10 per cent. of these laborers obtainable, due to the fact that a large majority of them have returned to their European homes.

The brickyards are now undertaking to educate a new type of laborers to take the old workers' places, and they find it hard to both secure and train the other type of foreign laborers. The Italian type has proved to be the best class of workers for the brick and clay industries, as others do not seem to take so readily to the work nor with the same degree of efficiency as do the Italians. The new process of education so far has been slow and unsatisfactory.

However, regardless of the high cost of building materials, there are several large buildings of brick structure contemplated—the Insurance building and the Balfour-Guthrie building, both to be fifteen stories high; the Standard Oil Company's new office building, to be twenty stories, and the new Federal Reserve Bank building, which will take over three million bricks, are to be erected in the near future.

There are enough factory extensions, school buildings and office buildings to be erected in the future to assure the brick and clay manufacturers of three or four years of great prosperity, providing the labor conditions can be improved and the production stimulated.

The discovery of a good clay deposit in the vicinity of Los Angeles has been the cause of plans and preparations for the construction of a china and pottery plant in the industrial section of Los Angeles. H. H. C. Hammerton, formerly connected with the pottery business in East Liverpool, Ohio, and founder of the Hammerton Co-Operation Industries, has announced that work on the new plant is soon to commence. The new pottery will occupy a large part of a 500-acre tract at Terrence and will be run on a co-operative base, all employes sharing in the profits of the company.

C. P. Whitney and Fred Olzeg of Fallon, Nev., have secured a machine for the manufacturing of pressed brick and have installed it in their new plant. They expect also to manufacture drainage pipes and take up other classes of fire clay work as soon as they get their plant in good working order.

The Richmond (Cal.) Brick Plant will soon be in the hands of the United Material Company, San Francisco, and the Los Angeles Press Brick Company. The United Material Company has bought a half interest in the plant and a new company is now being organized. The plant will be managed by the San Francisco company and operated by them. The superintendent of the plant will be Frank Irving, formerly foreman of the plant. The new firm expects to spend in the neighborhood of $50,000 in improving the plant and thus greatly increase the output.

The Old Mulford brick plant of the Vitrified Brick Company, Montebello, Cal., which has stood idle for so many years, is to be opened once more. The plant and fifteen acres of land, which has a large and rare deposit of vitrifiable clay, has been bought by the Simons Brick Company. The new owners will remodel the plant and convert it into a modern, up-to-date brick and tile plant of considerable capacity.

Walter Marone, the manager of the Simons Company, states that at the start they hope to turn out brick at the rate of about ten millions per year. The ultimate aim of the company, he says, is to install machinery and facilities for the manufacturing of building and roofing tiles and to ultimately devote the whole plant exclusively to the tile products. The tile work will require more expert workers and a higher class of laborers than they have on hand at present, but as soon as the plant gets well established and the skilled laborers obtained to carry on the tile work, the plant will be gradually turned over to the tile products. At present the old plant is being torn down, the machinery overhauled and rebuilt and made ready for operation. Just as soon as possible the new plant will start running.

Carl Anderson has announced his retirement from the Panama Pottery Company of Sacramento, Cal. The business in the future will be carried on by Andy Anderson, Victor Axelson and Gustaf Johnson.

The Livermore Fire Brick Works and the California Brick Company have moved their offices from Niles street to Room 504, 604 Mission street, San Francisco.

Fred A. Harrison, who has been with the Pressed Brick Company, Los Angeles, for over a year, has been appointed general manager of the company. Mr. Edward Frost is the president of the company, with headquarters in the Frost building.

SUNSET.

San Francisco.

WANTS INFORMATION RELATIVE TO PLASTIC CLAYS.

Editor The Clay-Worker:

I want to enlist your aid in a matter of indirect publicity. I have recently received a sample of clay from Greece, which is supposed to be the material used by the ancient Greek potters, and which seems to have certain wonderful properties. I have been trying for some years to locate a good red clay in this country, but have not been successful. No doubt some of your readers know of plastic red clays, not shales, and if so, I would deem it a great favor if they would send to me a small sample. I would be glad to pay any reasonable charges.

Yours very truly,

CHAS. F. BINNS,

Director New York State School of Clay-Working and Ceramics.

CORRESPONDENCE.

THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Ex-President Gregory Enjoyed Convention Report.

My Dear Teddy:

Copy of Clay-Worker with proceedings of convention received and I congratulate you upon the success of same, which I judge was one of the best ever. I regretted being unable to attend, but, as you know, Mrs. Gregory and myself took a trip to the Pacific coast which was very enjoyable. However, I hated to miss the convention and meeting with my friends, whom I have learned to love for their noble qualities which we have seen exemplified from year to year.

Hoping that we may be spared to meet next year, I remain,

Yours fraternally,

Corning, N. Y. M. E. GREGORY.

Building Homes for Employes.

Editor The Clay-Worker:

In answer to your inquiry, the houses we will build for the accommodation of our employes will be temporary only, and will be constructed on the collapsible unit plan, our plan being to later replace these with hollow tile and face brick construction. These houses will be two, three and four-rooms, each room being uniformly 12 x 12 ft.

The houses will be rented, including the furnishing of natural gas and water, at the following rates: Two-room houses at $6.00 per month; three-room at $8.00, and four-room at $10.00. We consider this quite reasonable in comparison with the rates prevalent in Oklahoma, which run from $8.00 to $10.00 per month per room.

The plans of operating our new plant include the installation of a free laundry, ice at actual cost and a free school for the teaching of bricklaying. Our men work under the bonus system, which gives them an inspiration toward full efficiency.

When our plant is in operation, we will install other ideas that will tend toward the idea of uplift of our employes.

Yours truly,

R. E. BUCKLES,

Manager Okmulgee Brick Co.

A Message to Drain Tile Users.

Editor The Clay-Worker:

We see by your March number that we are down as from Chicago, but while we are not as large a town as the Windy City we make up for it in the push our people have and especially the men who are behind this company. With the new Board of Directors and under the capable management of W. H. Seward, we will put Hoytville, Wood County, Ohio, on the map. If we could only educate the farmer that he must buy early what a help it would be to us, but, no they wait until the last moment and then come in and want 10,000 tile and want them the same day. Day after day we have this same thing happen to us and we are sure the rest of the tile producing plants all over the country are in the same boat that we are. Stores advertise to "Shop Early," why not the farmer; it is very disappointing both to us and them to have to turn men away this way and causes a feeling that will take some time to eradicate. What do the rest of you tile manufacturers think of this? Our motto is Mr. Farmer, Shop Early.

Very truly yours,

THE HOYTVILLE CLAY CO.

Hoytville, Ohio.

Brick, Trout and Mountain Dew.

Dear Mr. Randall:

Please send us The Clay-Worker. We cannot get along without it, as the Pendleton Brick Company, of which John A. Hudgens, Pelzer, S. C., is president and treasurer; C. H. Williams, of Atlânta, Ga., manager and secretary, have purchased the plant of the Hannon Brick Co., Pendleton, S. C., and have remodeled it making it an up-to-date plant, the outlook for business is good. However, should the contrary happen, we are only 20 miles from the Blue Ridge Mountains and will then have time to take our friends where they can catch the finest mountain rainbow trout and perhaps run across some mountain dew. So come down and see us, but don't bring your wife as the snakes are very bad in the mountains. With best wishes, I am, Yours truly,

C. H. WILLIAMS.

Florida Plant Changes Hands.

Editor The Clay-Worker:

Enclosed find our check for which please send us "The Clay-Worker" for one year as ordered on blank enclosed herewith.

The Wilson-Owens Brick Co., located at and operated in Callahan, Florida, for the past fifteen years, has recently changed hands. The new owners are Henry Hull and Louis Rivas, of the firm of Hull and Rivas, Jacksonville, Fla., building materials. Chas. H. Carpenter, Chief Engineer for Gamble and Stockton Co., brick and tile manufacturers of Columbus, Ga., and Jacksonville, Fla., and Paul V. Carpenter, until recently from Martins Ferry, Ohio, where he was engaged in the banking business for many years.

Officers are: Chas. H. Carpenter, president; Henry H. Hull, vice-president; Louis C. Rivas, secretary-treasurer; Paul V. Carpenter, superintendent and general manager.

Jacksonville, Fla. is our chief market from which we are nearly 20 miles. Located on both Atlantic Coast Line and Seaboard Air Line Railroads, gives us good shipping facilities. Plant when we took it over had a daily capacity of 25,000 common brick. Already there are improvements in progress which will greatly enhance this output. We think we have the best clay in the state. CALLAHAN BRICK CO.

Old N. B. M. A. Member Pays Tribute to American Ideals.

Friend Randall:

There is a saying "Better late than never," but at the same time a fellow makes you feel a little disappointed when people get so slow about a thing, and it seems I am one of that kind as well, or rather you might think I am, but I want to tell you, old boy, I am not.

Well, enough of that, here is my check again for $5.00, dues that I told you last year that I should keep up as long as I had the wherewithal to do it with, and that is for the N. B. M. A. membership. You and all the rest of the crowd that I know have often come to my mind, and it hardly seems possible that another year has gone in since I wrote you last. It was my intention to have told the boys some of the doings of our government building scheme here and the effects it is having on the brick business, etc., and I intend doing it even yet, because it will be interesting, I am sure, for them to know just the condition of the housing schemes we have here, and also the shortage of houses. I never thought that I should live to see a condition such as we have here at the present time, and have had for a number of years now, and very little prospect of it being improved for some time yet; no doubt caused by the war in the first place, then again you can't change the British character, it's no use, any more than you can change the American character. The climate has a lot to do with this, I think; they are slow and conservative here, they want to know whether it will pay or not, etc., etc., before they will launch out, and in my judgment the government made the greatest mistake when they put on the rent restrictions act; that was what killed the building of houses here and, in my judgment, it will not be changed till that is changed.

Tribute to R. C. Penfield.

Before going further on this matter just now, for it will take me a long time to give you all I want to say, and I doubt if you would give me space for all there is to be said on it in one issue, I want to refer to pages 530 and 531 of the December Clay-Worker, in which you show the military lamp, etc., presented to R. C. Penfield. I think this well deserved, when a man will sacrifice, as I know he has done, almost everything for duty in one way and another for the benefit of mankind, he ought to be recognized. I can hardly find words to express just what I want to say, because we in this country in particular have had great need of such men as he is, that would stick to an idea that he knew would come out all right in the end, and which it did; I tell you we can't say too much for them. You know some people think about these matters, but that is all they do; there comes a time when you have got to stop thinking and go to work if you ever intend to get any place, or accomplish anything. If all we had done in this country was think, we should never have won the war. Oh, how I hate war, or to even think of it!

I want to digress a little just here, to tell you I had seven men billeted at my house soon after the war started, and five of these men made the supreme sacrifice; and when I tell you that there is scarcely a home in this country that has not met a similar fate, it makes one wonder, whatever we are all thinking of to allow such thoughts to get into our minds, as to have to kill one another to settle our difficulties. It makes one ask, are we sane or are we dreaming? I am pleased to say that most of the people are sane, and most of them are not dreaming either, thank God, and if I can say a word that would encourage such fellows as "R. C.," for I know from many of the matters that he has taken up absolutely alone, ridiculed by some because they could not see the end as he saw it, yet it turned out all right, I want to give them credit for it.

Complimenting Secretary Randall.

I want to say just a word about the N. B. M. A. Secretary. You know who I mean. No one can estimate the good this Association has done; you have seen several associations that have come along from this one, but I wonder if they will live to the same old age that the parent society has done, and do as much good. To you, Randall, is due the success of this. I never blame any one for copying a good thing; we can't get too many of the good things, and my wish is that all the different societies that have sprung from the N. B. M. A. will prosper and grow. It will mean a good deal of sacrifice on some one's part to keep them going, but I do hope it will be done, because we need everything that is an improvement to help put this world so it will be a nicer and better place to live in.

I am very busy, Randall, in public work here, being a member of the county council of the West Riding of Yorkshire, and on the education, health and housing, highways, and the rivers board committees, in addition to being a member of the local district council for the ward I live in, and if you will allow me, I will give you our experience on the housing matter here, both for the local council and the county, for we have housing schemes on for both. The local council is at the present time building fourteen houses of semi-dry concrete blocks. I have opposed it all the time but we have a majority of men on the council who have never even built a rabbit hutch of their own and, of course, not having had any experience, they think this stuff is both cheaper and better than either brick or stone. The latter we have lots of just in this locality; the large majority of the houses built here are covered with stone on the outside and lined with brick inside. It was claimed that when the first lot of concrete houses were built they would save $100 per house over stone and brick. This was never done, and we have had to spend over $400 trying to make them damp proof, and have not succeeded yet, and still we are building more of them; of course, this is public money, mind you. I have said many times if it was their own money they were spending it would be a different matter. Then again we are so in need of houses that the government will even allow wooden houses to be built here, which was something unheard of here before the war.

I am afraid this letter will be too long, so will stop for this time and will write you another in a few days, sure, on my trip to the Daily Mail Ideal Home Exhibition which is being held in London at the present time. A number of houses are built in this building, complete, ready to live in, and built of all kinds of material. The Daily Mail has given $13,500 in prizes for the best designs of ideal homes for the workers.

Give my best regards to all the Clay-Worker staff, and accept the same for yourself. I remain,

Very truly yours,

H. HAIGH.

THE BOOK OF SMILES.

The current issue of "Smiles" has a new department, "Hickory Corner News,' 'the first item in which reads:

"Mrs. Tooper Cent says that with women votin' we needn't think any presidential candidate can get himself elected by the simple expedient of getting himself called the "favorite son-in-law." And then the editor remarks, "Speaking of candidates, many run, but few arrive."

As usual the issue contains a number of timely squibs. For instance—

"April showers bring May flowers,
And for one we will opine
Of all the flowers,
Brought by showers,
None will be kept like the dandyline."

Another reads—

"Little drops of water, little raisins, too;
But Uncle Sam won't let us tell you what they'll do."

Between the two there are a lot of valuable pointers on how to dry brick. If you want information along this line, write for a copy or turn to their ad on page 472.

The following is a good finish under the head of "Real Optimism":

"Whatever else may happen,
Now that the country's dry,
The sailor will have his port,
The farmer have his rye;
The cotton still has got its gin,
The sea coast has its bar,
And each of us will have a bier,
No matter who we are."

REVIEW OF ILLINOIS CLAY MANUFACTURERS' ASSOCIATION CONVENTION.

THE FORTY-SECOND ANNUAL CONVENTION of the Illinois Clay Manufacturers' Association was held in the La Salle Hotel, Chicago, April 20 and 21. About fifty ceramists attended the session held Tuesday afternoon, which proved of much interest to those present as manifested by the lively discussion that followed each paper. After the reading of the minutes of the previous meeting which were adopted as read, Secretary-Treasurer C. W. Parmelee made his financial report which showed a fair balance in the treasury.

The first part of the program was given over to the consideration of the Forced Draft System of Burning, and the discussion of same. Professor R. K. Hursh of the Ceramic Department, University of Illinois, gave a definition of draft, method of application and the general principles underlying forced draft systems. Mr. E. F. Plumb of the Streator Brick Co., Streator, Ill., gave some very interesting data in regard to forced draft as used at their plant. In former days under the old system with no forced draft, they were satisfied with 88 per cent. Number 1 ware, using about 1,400 pounds of coal to the thousand brick and burning 180 hours. Today, with forced draft they get 93.8 per cent. good ware, using 1,096 pounds of coal per thousand brick on the average, burning in 147.7 hours, showing a gain of 4.8 per cent. of Number 1 ware, which on a basis of 750,000 brick per annum (only a portion of their plant being equipped with forced draft), gives them an increased value of $7.00 per thousand, amounting to a saving of $5,250 in ware alone. With coal at 2 cents per pound at kilns, a saving over the old way of 7.4 cents per thousand was made. The per cent. of time saved in turn of the kiln, with a kiln investment of $50,000 would give a saving of $1,500. If kilns are a limited factor the saving would be much greater. Under forced draft conditions he found that there was a big saving in fire box repairs, grates, etc., and also a great saving in condition of ware, with greater ease of unloading and better working conditions for the men. His figures were based on the making of shale brick which require a greater degree of heat in burning than the usual run of brick.

Mr. C. N. E. Carter, of Peoria, Ill., told of the use of forced draft system on their plant, describing the installation; there being a 12-inch main to a 26-foot kiln, 2½ H. P. motor being used to provide the forced draft. He stated by the use of forced draft the grates were kept cool and did not burn out; the fire box repairs, as well as the bag wall repairs, were much smaller than before, and there was a very noticeable improvement in condition of ware, with a better settle and more even burn. Mr. Harvey C. Adams, of the Danville Brick Co., of Danville, stated that his company saved in coal, saved in time, and saved in per cent. of good ware. At this plant they use an individual motor for each kiln one circular duct around each kiln. Fourteen fans are used which are driven by a 25 H. P. generator. The fans are mounted on trucks and covered with galvanized iron for protection and are easily moved as needed to any of the twenty-eight kilns. In the discussion which followed, James R. Thomas, of the Standard Brick Company, of Crawfordsville, Ind., told of the benefits of the furnace gas producers used on their plant. Where they formerly burned in six to seven days they are now burning in three to four days. By the forced draft they found they could force their fires on other kilns.

Prof. E. W. Washburn, of the University of Illinois, gave a chalk talk on "Some Factors Involved in Drying of Clay Wares." He explained the principles applying to drying, the meaning of viscous flow and plastic flow and cited a laboratory experiment which showed a phenomena in drying clay ware by gravitation.

A splendid address was made by Professor G. H. Radebaugh, of the University of Illinois, on the subject of "Belts and Bearings." He discussed the installation of belts and the care of leather, rubber and canvass belting, touching on the application of belts, belt fasteners, laced belt joints, style of leather lacings and belt dressings, rubber belting and dressing for same; canvass belting; how to determine length of belt, belt records; inspection of belts; how to glue and clean a belt; and how to rebabbit a shaft bearing. After considerable discussion of the various points brought out by Prof. Radebaugh, Prof. Carl Harrop, of the Ohio State University, gave an instructive talk on the Tunnel Kilns and was followed by conrad Dressler on the same subject. This was similar to the discussion at the National Brick Manufacturers' Convention at Columbus, Ohio, as given in the March 25 issue of The Clay-Worker.

The last paper of the afternoon was by Prof. C. W. Parmelee, of the Ceramic Department of the University of Illinois, on "The Composition of a Paving Brick as Related to Its Rattler Test." He showed that the toughness of paving brick was due in part to firing under reducing conditions, the time factor in burning being important as well as the rate of cooling the ware. He pointed out the effects of different minerals in clay in their relative value in securing desired toughness of ware, explaining that the silica content was of extreme importance in this particular.

Tuesday evening, at 6:30, a delightful dinner was held under the auspices of the Chicago Section of the American Ceramic Society. H. F. Bellamy, of Chicago, presided during the informal meeting following same.

I. E. Hardy, of Momence, Ill., spoke entertainingly on "The Enamel Brick Industry," declaring that the lack of great strides in this branch of the ceramic field was due to the multitude of shapes and shades which entailed extra cost in burning, and also in nearly all other departments of the factory. In the discussion which followed, "The Cause of Green Spots in Enamel Brick and Terra Cotta" was declared to be due to minute particles of iron, a very small per cent. of which will cause great trouble in glazed ware.

Mr. H. P. Matzen, Chicago, spoke on "Humidity Drying," and was followed by Dr. Washburn and Douglas Stevens, Prof. Parmelee, W. D. Gates and William Hammerschmidt, all of whom made brief but appropriate speeches.

Wednesday morning was given over to separate sessions of the various organizations.

The Indiana-Illinois section of the American Face Brick Association held their regular monthly meeting at which the problem of labor shortage and car shortage and freight rates were thoroughly discussed. The outstanding feature of the meeting was a talk by Mr. G. E. Mars, the advertising manager of the American Face Brick Association, who detailed the work of the publicity campaign. Nearly $1,000,000 will be collected and spent within the next three years, advertisements being placed in the popular magazines. This sum of money is to be raised by an assessment of 50c per thousand brick manufactured.

The Illinois Paving Brick Manufacturers held a monthly meeting, the more important work being changes in paving brick specifications.

At noon the various organizations held a joint dinner under the auspices of the Illinois Clay Manufacturers' Association. President Hervey C. Adams presided at the informal "talk fest" which followed.

Dean Richards, of the College of Engineering, University of Illinois, told of the history of the Ceramic Department at the University, explained work and scope of the engineering colleges and need of assistance from Illinois Clayworkers for securing better appropriation to carry on the work and keep up the high standard of this important department.

The labor problem was the chief subject discussed at this meeting. Eben Rodgers, of the Alton Brick Co., Alton, Ill.; J. A. Reeves, of the Streator (Ill.) Drain Tile Co.; Douglas Stevens, Acme Brick Co., Danville, and G. E. Mars, of the Hydraulic Press Brick Co., St. Louis, all made excellent talks collectively covering the ground from all angles.

The meeting was adjourned after the election of officers which resulted as follows:

Harvey C. Adams, Danville, Ill., President; Ben Richards, Edwardsville, Ill., Vice-President, and Cullen W. Parmelee, Urbana, Ill., Secretary-Treasurer.

AN APPRECIATION OF A. V. BLEININGER.

THE PITTSBURGH District Division of the American Society met in the Chamber of Commerce Building, April 20, and enjoyed an interesting program, which included a number of technical papers and a "Symposium on the practical measurement of heat." In the evening there was a dinner party, an informal affair intended as a farewell tribute to Professor Bleininger, who is soon to leave Pittsburgh for Washington, D. C., where he will establish headquarters at the Bureau of Standards. A very pleasant surprise was handed "Albert" in the form of a substantial purse, made up by his admiring friends with whom he has been associated of late years. It was a well-deserved tribute. Certainly no one individual deserves more from those in the ceramic field than Prof. Bleininger. An amusing incident of the dinner was the following telegram to E. Ward Tillotson, the master of ceremonies:

"Very sorry, but was unable to get away. Ask those assembled if any of them can tell why Bleininger is like the Sphinx, and then read the following by Riley:

"'I know all about the Sphinx;
I know even what she thinks,
Staring with her stony eyes
Up forever at the skies.

For last night I dreamed that she
Told me all about the mystery;
Why for aeons mute she sat,—
She was just cut out for that.'

"Albert is doing just what he was cut out for, and he is doing it fine, to the glory and great benefit of the entire claycraft. Here's hoping that his tribe may increase and that long life and happiness will be his lot. THEO. A. RANDALL."

There were a few impromptu speeches so laudatory in character that Professor Bleininger was really embarrassed, but he carries with him to his new home the consciousness of the best wishes and high personal regard of all who have been associated with him in his labors at Pittsburgh. It falls to the lot of few men to contribute so much to the welfare of a great industry as has Professor Bleininger during the past decade, and it is anticipated that increased facilities afforded at Washington will insure even better and more efficient service in the future.

FORTHCOMING MEETINGS.

There are a number of gatherings and conventions not of clayworking industries proper but in which various members of the trade should find matters of interest, among them being the following:

The seventh annual National Foreign Trade Convention is to be held at San Francisco, California, May 12, under the auspices of the National Foreign Trade Council, of which O. K. Davis is secretary.

The twenty-fifth annual convention of the National Association of Manufacturers is to be held at the Waldorf-Astoria, New York City, May 17, 18, 19.

Americanization Exposition is to be held at the Grand Central Palace, New York, May 29 to June 12, in co-operation with the American-British-Dutch Tercentenary Celebration of the Pilgrim Fathers. This is under the direction of Americanization Educational Exposition, incorporated, with headquarters at Hotel Commodore, New York.

International Chamber of Commerce. A meeting is to be held in Paris, France, during the week of June 21, at which it is expected to organize the International Chamber of Commerce as projected by the International Trade Conference at Atlantic City last October. Further information about this can be obtained from the Chamber of Commerce of the United States, Washington, D. C.

REORGANIZATION OF CERAMIC EQUIPMENT COMPANY.

Eugene A. Hults Becomes President and Managing Director of This Live Organization of Clay-Drying Specialists.

Economy of operation and efficiency in production are very important factors in industrial enterprises of whatever sort or character. Particularly is this true in clayworking, whether it be in the production of the humble brick or the finer grades of pottery, porcelains, etc. Having to do chiefly with the latter products, the Ceramic Equipment Company of Trenton, N. J,. has organized for the purpose of serving this particular branch of the clay craft in all practical and technical lines pertaining to production. As the reader will see by turning to their ads on pages 466 and 467 of this issue Mr. Eugene A. Hults is president and managing director of the Ceramic Equipment Company. Mr. Hults has been one of the live wires in the clay industry for years past and has been unusually successful in all his undertakings. The drying equipment which they offer the trade has been perfected to a point that leaves little or nothing to be desired. They are making a specialty of automatic stove rooms and mangles, conditioning equipment, continuous automatic sagger dryers and special equipment for drying pottery, electric porcelain, abrasive products and general ware. Mr. J. L. Buckley continues with the company as organization and sales engineer. Clayworkers who have problems or troubles to overcome will find it advantageous to consult the Ceramic Equipment Company. Their corps of trained experts are at the service of the craft.

OHIO COMPANY TO MAKE IMPROVEMENTS IN PLANT.

To meet the constantly growing demand for clay the Finzer Brothers Clay Company of Sugar Creek, Ohio, will double its facilities, and recently announced that the capital stock of the firm will be raised from $100,000 to $200,000. The Finzer Brothers Company is one of the most reputable in the Canton district, having been firmly established in the clay and coal industry for more than ten years.

The Finzer Company is heavily interested in both coal and clay lands in the western part of Tuscarawas county, where it also operates a hollow ware plant and coal mine. In addition to the plant already in operation the company expects to install a steam shovel for loading the clay, larger and better clay grinding, feeding and molding machinery, a twelve-track dryer and nine 32-foot kilns. With this added equipment they expect to increase the capacity of their plant to five times its present output.

In the matter of conserving and increasing the food supply, it is actions that speak louder than words, and it is the hoe that is mightier than the pen.

THE CLAY-WORKER

Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

Title registered, contents copyrighted.

THIRTY-SEVENTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " "	10.00
Ten copies, " "	15.00

Foreign subscriptions 65 cents additional.

☞Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
226 East Ohio St. T. A. RANDALL & CO. [Inc.], Indianapolis.

Vol. 73. APRIL 1920. No. 5.

CURRENT COMMENTS.

Make May Day American Day.

* * *

This is no time for idle kilns—keep the fires going.

* * *

The spring crop of opportunities for clay products is coming along nicely.

* * *

Coal cost is getting to be something of a nightmare. Likewise the scarcity of coal at any price.

* * *

One good thing coming out of the high fuel cost is that it is forcing rapid development in kiln burning economics.

* * *

The railroads go back to private ownership with a car shortage hang over that gives the shipping public a headache.

* * *

Some people who sold hollow tile at sacrifice prices a while back are now wishing they hadn't and that they still had the tile.

* * *

This is one year that the folks are not falling over each other in a scramble for big orders. The reason is there are plenty of others.

* * *

Rent profiteering is admittedly a bad thing when you are the victim, but maybe we can get a little consolation from the idea that it serves to stimulate home owning.

* * *

One of the things we feel assured about in connection with the railroads is that the shippers are in for an increase in freight rates, and one of the big reasons back of it is the higher pay that government ownership dished out to the railway employees.

* * *

You may have some surplus brick by fall, but it is right now that they are sorely needed.

* * *

No one will seriously question the fact that machinery men help make conventions progressive.

* * *

It is time to advise the public that the dampwalls of the old soft brick days should not be held against the modern hard burned clay products.

* * *

If we would all practice the doctrines we are ready to lay down for the other fellow there would be very ltttle need for further preaching of right doing.

* * *

Some of the prospective builders are these days inclined to question whether bricklaying is an art or a robbery when they face a wage schedule of $1.25 an hour.

* * *

Maybe you can cut down the fuel cost a little by the installation of mechanical devises for unloading and handling your coal instead of having to pay out high wages for hand labor.

* * *

About the best plan to cure delivery delays caused by poor railway service is for more people to put more trucks into commission for helping in the short hauls. Moreover, the short hauls can be lengthened materially by a little effort.

* * *

In putting into practice the widely preached doctrine of the day that it is now necessary to recognize the worker, let us not overlook the fact that there is a wide and striking difference between recognizing the workers and being dominated by them. There is too much of the latter happening.

* * *

It took that pioneer, John T. Hummert, of Quincy, Illinois, to remind us that technical investigation and development in brickmaking started from a paper delivered by Professor Orton, at a N. B. M. A. gathering at Chicago in 1894. There is food for thought in the things that have happened since that date.

* * *

As stated by Mr. Stull at the annual meeting, there are three governmental agencies which are and can be of direct assistance to the clay industries. They are the U. S. Geological Survey, The Bureau of Mines, and the Bureau of Standards. These departments merit our earnest support and cooperation.

CONSERVATION IN HUMANITY.

The greatest of all our industrial resources is humanity, and it is time for us to consider the conservation of humanity in the light of a good business proposition. This means, in every day language, looking after the welfare of ourselves and those who work for us and with us. It means better health and a better order of accident prevention. Good health is good business, and it is time for shaking off some of our reservations about individual rights and privileges and get down to the brass tacks of co-operation for improvement in the every day health of toiling humanity. This naturally involves all practical precautionary measures to prevent accidents, but let us not forget that it also includes the general physical well-being of everybody. It is a matter of community interest as well as of individual concern. Also, it is a matter of good business and should be made a part of our industrial policy.

CAR SHORTAGE.

Not only has the shortage of cars been making the fuel problem a somewhat difficult one for the clay workers lately, but this same shortage of cars is seriously hampering trade involving the shipping of brick. About the only chance for relief is a coming of warm weather so that the coal trade will not demand all the available cars. So long as cars are needed for coal this trade will be given the preference and brick and other building material will have to take the leavings. It is not a very encouraging situation for the spring trade, but these are the stubborn facts and we might as well face them and make the best we can of it.

TWO KINDS OF UNFAIR COMPETITION.

With the unfair competitor, as with trouble, there are two kinds, the kind that really exist and the kind that we simply think exist. It appears upon investigation, too, that quite a percentage of price cuts and concessions made in trade result from imaginary unfair competition instead of the real sort. Surely if this is true it is time to know your competitor better and especially to make sure that he really is unfair in his methods before you assume this to be the case and act accordingly. Good understanding between men in the same line of business makes for good business.

"SIX DAYS SHALT THOU LABOR."

There is an old Biblical injunction anent the Sabbath which, in addition to adjuring us to keep the Sabbath, tells us that we shall labor for six days. There is nothing about a six-hour day nor a five-day week, nor is there a hint that we should spoil Saturday by shortening it half a day and then being slackers on the half day we do work Saturday because not much can be done anyway. We not only need to do more work to increase production, but more work will be good for most all of us. And right now a little more of this good thing will help relieve a lot of the conditions that a lot of people are complaining about.

THE PACE-SETTER IN BRICK MAKING.

The urgent demand for brick early in the season in many localities has exceeded the available supply. This has served among other things to demonstrate what it is that sets the pace and limits the capacity of a brickmaking plant. That thing is the drier. Inquiries here and there among brick men as to the possibilities of speeding up by doubling the shift has almost invariably brought the answer that it is the drying capacity which limits the output possibilities of a plant. The drying and the burning, too, continue night and day under normal conditions. Now and then one finds a plant where the drying and kiln capacity is such that the machinery equipment may be operated overtime or double shift for short time. As a rule, however, increased operations by overtime running or double shift work are not practical in the brick business because it is the drying and the burning which sets the pace. Often, too, these are below the capacity of the machine equipment running a single shift therefore they make impractical double shift work. To get more elasticity in brick plants therefore it is plainly evident that the need is for a surplus of drier and kiln capacity. The inevitable conclusion is that the average brick plant needs to spread out a little in its drying capacity.

THE DOINGS IN COAL.

Now that the union miners and mine operators and the constituted governmental authorities have finally agreed on a 27 per cent wage advance for mining coal, all seems to be lovely as far as they are concerned. The trouble is they do not seem to be concerned about the public and how it may feel under the effect of this continually piling up of coal cost. The coal consuming public has felt and in the main continues to feel that the only movement in coal cost and price after the tension of war should have been downward. It's not going to be easy to dispel this feeling, either. Coal is a basic article and the matter of fairness in its cost is one of more importance and direct concern to the country as a whole than almost anything else. Right now the country as a whole has a feeling that it is being held up by the coal industry. It will be well for the coal people to take cognizance of this feeling and exert itself toward removing it by concentrating efforts at reducing mining and delivering cost. The public is fed up on propaganda educating it to high prices. What is wanted is cheaper coal and fair words, and figures will not appease this want. Let the coal industry devote some of its efforts to reducing coal cost, for that is about the only way it will again obtain the public good will and sympathy.

COMMON SENSE THRIFT.

There is always need for and room to urge thrift, practical thrift, in a sensible manner. Unfortunately at the present time we have the spectacle of too many men of wealth and large incomes busily telling men of small incomes how to save their dollars. We have had what is almost a plague of publicity pests for two or three years now, and they are still at it, some of them turning loose reams of printed stuff and bombarding the reading public with their great self-acclaimed wisdom, telling all of us what is happening to us and how we can cure most of our ills by listening to them and following their wonderful advice. We need to practice thrift and there is no danger of us developing too much thrift in the present generation, but it is time to put a brake on some of the high-flown oratory and far-fetched arguments and get down to brass tacks talk of every day doings in this matter of thrift and economy. It is time to shut down on the talking machine and start up the work machine.

BRICKLAYING.

One of the questions of the day is to what extent the high wage demands of bricklayers retard the progress of brick in building operations during the year. Demands ranging up to a dollar and twenty-five cents an hour are heard of, and it is not much comfort to learn that the carpenters are following after the bricklayers in their wage demands. It all adds discouragely to the cost of building, and besides that, the men on the farm and around the homes can readily do some of their own carpenter work because they have been trained into the use of these tools, whereas none of them has had any training in the laying up of brick and hollow tile. It has been said before, but it deserves to be repeated again and again, and we expect to keep repeating the assertion, that more attention should be given to instructing the sons of farmers and other home owners in the simple art of laying up brick and other clay products.

PIECE WORK AND PROFIT SHARING.

From the discussions held at the N. B. M. A. annual convention and from the sayings and doings among the individual

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members of the trade it is easily evident that the trend of opinion among employers today is toward piece work and profit sharing rather than a flat day wage.

In this connection some follow the piece work idea while others lean toward profit sharing plans and bonus schemes. In the final development we will probably realize that piece work plus profit sharing is the answer. This will mean putting men on the task of piece work basis rather than a flat daily wage and then dividing periodically a percentage of whatever profit may be accrued in the business.

There will always be daily wage employes, and there will never be a perfect system devised, for the simple reason that perfection is not human. There is, however, a general feeling that some new order of relationship should be established between employers and employes for the future good of both. At present the best answer which appears from out the mass of opinions and discussions is a combination of piece work and profit sharing.

COMMON BRICK MANUFACTURERS' ASSOCIATION MOVES OFFICE TO CLEVELAND.

We are in receipt of an announcement from the Common Brick Manufacturers' Association of America of the removal of their main office from the Conway Building, at 111 West Washington street, Chicago, to the Schofield Building, Cleveland, Ohio., where all communications should be addressed.

NEW YORK BRICKLAYERS' STRIKE SETTLED.

The strike of 7,000 bricklayers, which has interfered with building in New York City recently, has been settled and the men are back at work.

Mayor John F. Hylan acted as mediator and awarded the men 12½ cents increase, which makes their pay $1.25 an hour instead of the $1.50 asked. The award is for a basic working day of eight hours and is binding till January, 1921.

CHANGE OF NAME OF SEWER PIPE ASSOCIATION.

The name of the Sewer Pipe Manufacturers' Association has been changed to the Eastern Clay Products Association, and the headquarters has been moved from Akron, Ohio, to Pittsburgh Life Building, Pittsburgh, Pa., May 1. John L. Rice, Field Commissioner of the Association, will establish headquarters at Philadelphia.

A PRODUCTION CONVENTION.

The eighth annual meeting of the Chamber of Commerce of the United States which is scheduled for Atlantic City, April 28-29, is being programmed as "An increased production convention." Here is hoping that is what it will be and that it will produce real things and not merely a discussion of things. What we need these days is more practical acting rather than more preached urging.

HOLLOW TILE LITERATURE.

Among the recent and worth while offerings in literature going out recently by the Hollow Building Tile Association, we note two attractive books. One is "Hollow Tile for the Home," and the other is "Hollow Tile Farm Buildings."

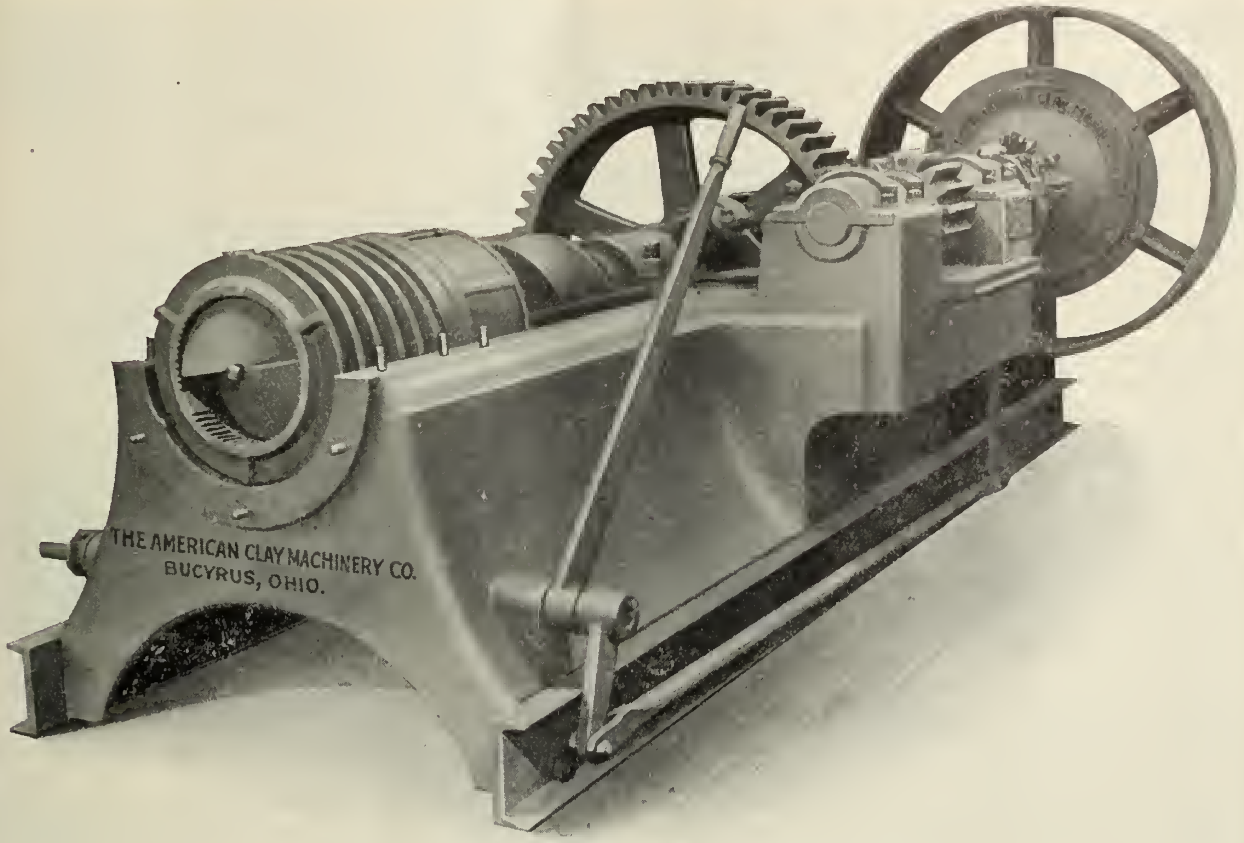
In both instances they follow the right idea, which is that of showing attractive pictures of buildings with floor plan sketches. This is being recognized as the best form of exploitation and it should contribute materially to promoting the use of hollow tile in home building and in farm building. These are two purposes for which there is now great need for active propaganda for all clay producers, and the Hollow Building Tile Association is making a splendid showing with these two new booklets.

REFRACTORIES ASSOCIATION ELECTS OFFICERS.

At the meeting of the Refractories Manufacturers' Association, held at White Sulphur Springs, Va., in March, the following officers were elected: President, John D. Ramsey of St. Marys, Pa.; vice president, John L. Green, St. Louis; treasurer, C. C. Edmunds, Pittsburgh; secretary, Frederick W. Donahoe of Pittsburgh. The Association maintains headquarters in the Oliver Building, Pittsburgh.

THE MATTER OF WAGES.

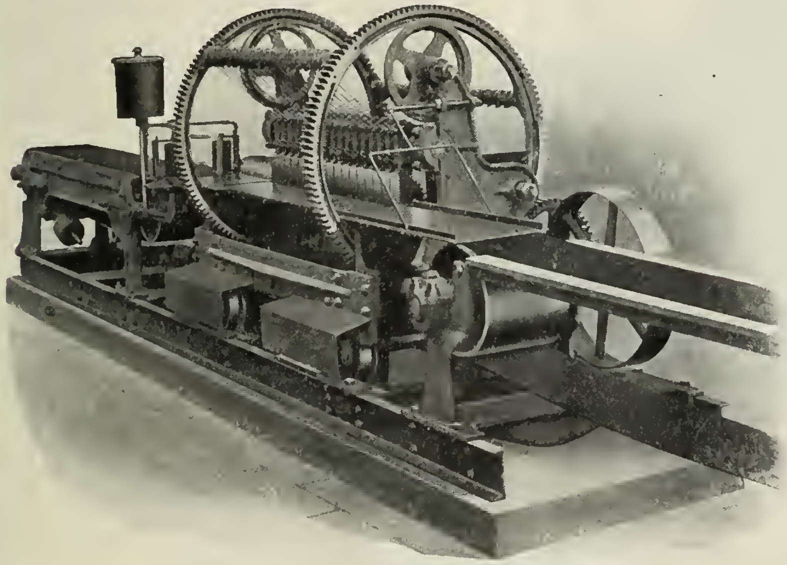
One of the puzzling things that a lot of the industrial attention is centered upon now is the matter of wages. The feeling is pretty general that the old flat day wage scale should be discarded and improved upon in some manner that will stimulate more interest and effort on the part of the workers. Many different bonus and profit sharing schemes have been devised and are being experimented with and it will probably take a year or two to get a clear light and find a rational solution of the question. At present the trend of events points toward using the piece work idea as a basis for wages and supplementing this with some form of bonus or profit sharing based upon extra effort and various qualities of superiority in workmanship. Undoubtedly many of the complex schemes and far-fetched ideas should be abandoned and something simple and understandable as well as encouraging to effort should be generally adopted wherever practical. The starting point seems to be the piece work or task unit basis, which may be supplemented in some simple manner periodically with a stipulated percentage of profit.



American No. 233 Auger Machine.

American No. 233 Auger Machine

Here is a "Close Up" of the American No. 233 Auger machine. We can't describe it here but we give all the detail in our No. 233 Bulletin. There isn't a better machine anywhere. Send for copy of Bulletin 233 and get the details.



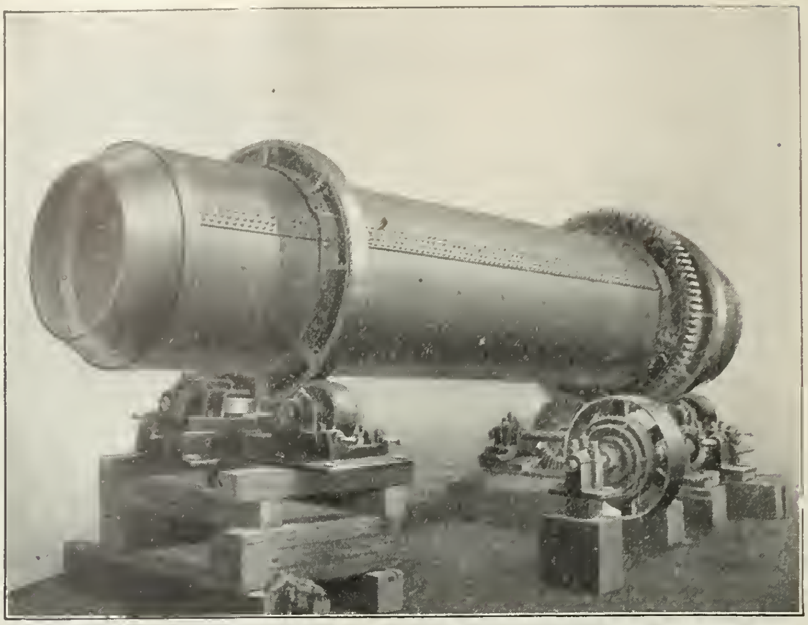
American No. 342 Cutter

American No. 342 Cutter.

The American No. 342 is one of the most reliable, simple, easy running cutters known to the clay trade. It's accurate and right in every way. We have a bulletin, No. 342, which tells all about this cutter. Send for it. We build every machine and appliance needed by Clay-workers.

The American Clay Mchy Co.
Bucyrus, Ohio

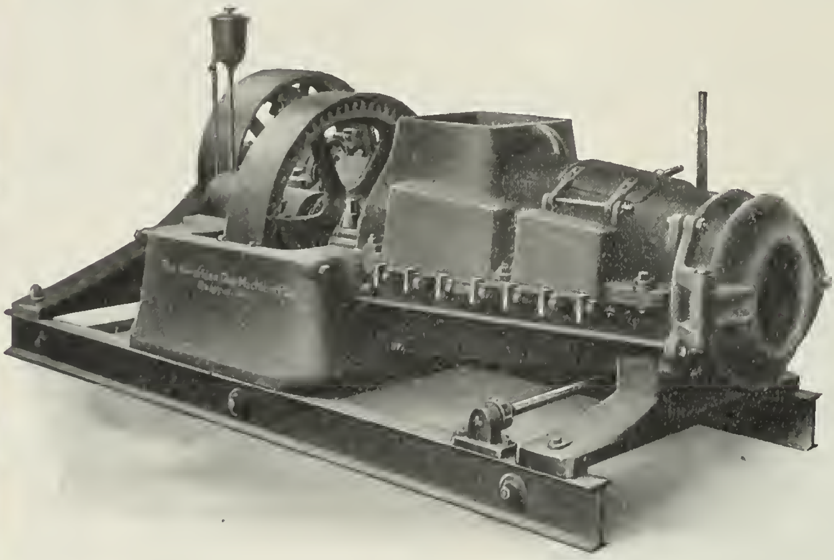
American Rotary Dryer.



American Rotary Dryer

We manufacture a line of Rotary Dryers covering range of sizes and capacities and adapted to drying clays, shales, sands, marls, slurries, fertilizers, crushed limestone, and for calcining fire clays, roasting ores, and handling a great variety of other materials from which moisture must be removed at low cost, or in which special heat treatment is required There are two general types of these dryers, distinguished as DIRECT and INDIRECT heat dryers. In this type of dryer the gases of combustion are drawn through the revolving shell and brought in the most intimate contact with the wet materials. They are adapted for use in drying any materials which will not be injured by high temperatures or by the gases of combustion from the furnace. It is by this method that the greatest amount of moisture can be removed for the least fuel cost. Send for circulars.

American No. 168 Pug Mill.



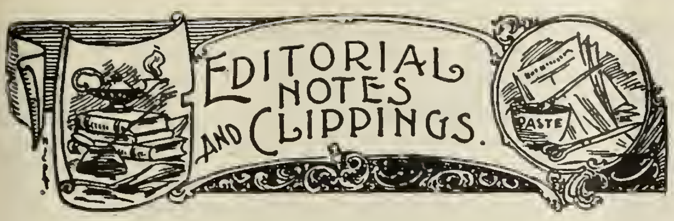
American No. 168 Pug Mill

For thorough mixing the American No. 168 mill is easily one of the best and most thorough on the market. It is widely used and is giving general satisfaction. Get our No. 168 Bulletin. This machine is used largely in glass plants and terra-cotta works. It is short in the barrel to allow the material to be returned for repugging if the first operation has not put the material in perfect condition. It is built for convenience and service.

The American Clay Machinery Co.
Bucyrus, Ohio

BUILT RIGHT RUN RIGHT

EDITORIAL NOTES AND CLIPPINGS.



L. C. Mauney will start a brick plant at Edgefield, S. C.

Friend & Co. will establish a tile manufacturing plant at Waverly, Va.

Charles Brewington, of Stamford, Texas, will erect a brick plant of 40,000 daily capacity.

Wm. Karrick, Salt Lick, Ky., advises us that he wants some plans for kiln for burning brick and tile.

The Tilbury Brick & Tile Company plant at Tilbury, Ontario, Canada, which was recently destroyed by fire, will be rebuilt at once.

The Standard Pottery Co., of East Liverpool, Ohio, announce they will build a modern sixteen kiln general ware pottery in the near future.

H. H. Kinette writes that he contemplates going into the brick business at Noma, Fla., and would be glad to receive catalogues of machinery and supplies.

Joseph D. Langlois has purchased the brickmaking plant of Frank M. Favor at Gardner, Mass. This is one of the oldest brick plants in that section of Massachusetts.

The Southern Brick Company of Mullins, S. C., was chartered yesterday with a capital stock of $10,000. Thomas E. Cooper is president, and R. B. Stephens, secretary and treasurer.

The Kertamos Pottery Co. has recently been organized at East Liverpool, Ohio, with $20,000 capital stock. T. H. Jones, S. L. Coventry, F. C. Soule, W. Silverman and S. E. Anderson are interested.

The Nichols Brick & Tile Company, of Dyersburg, Tenn., is a new Tennessee firm, which has been capitalized at $25,000. The incorporators are John M. Nichols, C. A. Rogers, E. L. Smith and E. E. McDavid.

The Howard Refractories Company of Dorsey, Md., has recently increased its capitalization, and will make a number of improvements in the plant which will give them an increased output. A. Wolf is secretary of the company.

The Mt. Union Refractories Co., with headquarters at Lock Haven, Pa., is starting another fire brick plant at Baratt Station, in Clearfield County, Pa. R. P. M. Davis is president of the company which is now operating several successful plants. The manager of the new plant will be C. V. Hackman.

Harvey H. Hannan, Commissioner of Railroad and Public Utilities of Nashville, Tenn., has a farm near Oliver Springs, in the eastern part of Tennessee, on which a large deposit of unusually fine clay has been discovered. He would be glad to correspond with parties interested in establishing a clay-working plant in that section.

The work on the new plant of the Tri-State Brick & Tile Co., at Sheridan, Ohio, is progressing nicely. The company has made a contract with the Ohio Valley Traction Company for the extension of a high tension wire to the plant which will be run by electricity, a number of 300 horse power motors having been contracted for. The plant is to be as modern and complete as possible.

The Quin-Win Brick & Tile Company has been organized at Sturgis, Ky., and will at once build an up-to-date brick plant. They hope to have the plant ready for operation early in the summer. The officers and stockholders are as follows: Bill Wynn, president; Fred Alloway, vice president; Miss Eulah Martin, secretary and treasurer; Bill Quinn, general manager; C. T. Wallace, Sam Martin, Lee O'Nan, George Davis, B. W. Dyer, Dr. B. F. Humphrey.

F. W. Hirt, a pioneer in the tile and mantel business in Erie, Pa., announces he has sold his interest in the Erie Tile and Mantel Company to W. K. Weaver, of Philadelphia, former president of the Pittsburgh Tile Contractors' Association and proprietor of a tile business in Pittsburgh for many years.

A new five-kiln general ware pottery will be erected by the W. S. George Pottery Company at Beaver Falls, Pa.

The Whitney Brick & Tile Company will improve and enlarge and improve its plant at Whitney, Fla.

The Wateree Brick Co. will build a 50,000 daily capacity brick plant at Camden, S. C.

J. J. Brown, R. B. Ward, J. Ducey of Haverstraw, N. J., have organized the Ramapo Brick Co., of that city, with $25,000 capital stock.

The Southern Sewer Pipe Company will erect a $25,000 addition to their Birmingham, Ala., plant. The new part will be constructed of hollow tile.

John C. Jordan has purchased the brick plant of W. Schmidt, at Kenton, Ohio, and has incorporated the Kenton Brick & Tile Co.

Isaac Harr, of the Harr Building, Johnson City, Tenn., would like to correspond with manufacturers of brick and tile machinery for plant.

The Roper-Strauss-Ferst Co., of Birmingham, Ala., has been organized with J. W. Ager as vice president and general manager. They will erect a plant for the manufacture of hollow tile.

C. F. Garber, of Morgan City, Ia., writes that he has been out of the brick business for eighteen years, but now expects to get back into it, and so sends for a copy of his old friend, The Clay-Worker.

The plant of the Glenwood Brick Company, of Erie, Pa., which has been closed down for some time has been overhauled and put in shape to operate right through the year turning out both face and common brick.

J. L. Henderson, of Hemphill, Texas, will erect a brickmaking factory at that place with a capacity of 30,000 brick per day, and would like to receive catalogues of brick machinery and accessories. Address him P. O. Box 271, Hemphill.

Cook & Brown Lime Company, of Oshkosh, Wis., leased a sixty-acre tract of brick clay land from F. R. Carter of Peoria, Ill. The firm intends to remove the clay from the land and convey it by boat to Oshkosh where it will be manufactured into brick. Many buildings are to be erected for the use of the workmen.

Phoenix, Ariz, is to have a hollow tile and brick plant, of which T. M. Fannin will be manager. The plant will have an initial capacity of 40,000 brick per day, and about an equal output of hollow tile. T. L. Myers is in charge of the construction of the plant which is being pushed to completion as rapidly as possible.

The Overland Pressed Brick Co., a new industry for Denver, has purchased a plant and twelve and one-half acres of land near Overland Park, where it will begin operations at once. The property includes a big bluff containing a fine quality of clay, and was purchased from Frank E. Marshall, head of the Marshall Pressed Brick Co., which has ceased production. Those in the new company are Alexander Brown, Wm. E. Young, W. F. Robinson, C. C. Schrepferman, of the contracting firm of Brown & Schrepferman; John H. Rouckhom and William E. Flohr. Mr. Robinson will act as attorney.

The merger of the Portsmouth Clay Products Company with the H. Leet Lumber Company, which was consummated recently brings together two very strong factors in the lumber and building material business in Portsmouth, Ohio. The consolidation of these enterprising companies will give Portsmouth something that it has long needed, a company able to handle contracts of any size and furnish the builder with every commodity that is required in any kind of construction. L. P. Haldeman, president of The Portsmouth Clay Products Company, will become a director in the H. Leet Lumber Company, and C. A. Burnett, former manager of The Portsmouth Clay Products Company will be identified with The H. Leet Lumber Co. in the capacity of general manager of the builders' supply department.

Work on the new plant of The Comanche Brick & Tile Company, of Lawton, Okla., has been started. J. W. Smith will have charge of the construction work. A switch has been run to the property from the 'Frisco railroad which will greatly expedite the work of getting material on the ground for the construction of the plant.

The Southern Potteries Company of Erwin, Tenn., of which Edward L. Owen is manager, will build quite an addition to their plant.

The American Firebrick Co., Mica, Wash., is to be enlarged to double its present capacity. Charles R. Oudin is president.

The 350 employes of the Ludowici-Celadon roofing tile plant, at New Lexington, Ohio, were given a ten per cent. increase in wages, on the 28th of March. Based on the present number of employes, it means an increase of $50,000 a year, the advance being voluntary on the part of the company, and is the fourth raise given in the last 18 months. The number of employes will be increased to 500.

The Kokomo Brick Co., of Kokomo, Ind., has recently been reorganized and capitalized at $100,000, with the following officers: John E. Fredrick, president; D. C. Jenkins, vice president; Willis B. Dye, treasurer; E. L. Danner, secretary and general manager. The plant is being remodeled and put in shape to run to full capacity for the company already has orders on hand to last several months.

The plant of the Bannon Hollow Tile and Brick Company, at Louisville, Ky., was almost wholly destroyed by fire, April 1. The flames started in the hollow tile department and gained headway so rapidly that the employes were unable to cope with them. The company is about four months behind with orders now and the work of rebuilding will be started at once. The old plant had been built a good many years and was mostly of frame construction, but Mr. Bannon states the new plant will be fireproof throughout.

The Evansdale Clay Products Company, which was recently incorporated to operate a clay products plant in Morgantown, W. Va., later held a stockholders and directors meeting and elected as directors, Otto Schenk, H. W. Campbell, F. G. Stroehmann, W. D. Watkins, George W. Roe, G. L. Vieweg, H. A. Henderson, Fred Faris, and C. Friderichsen of Wheeling, and J. H. McGraw and D. H. Courtney, of Morgantown. After the meeting of the stockholders the directors held their first meeting and elected Otto Schenk, president; J. H. McGraw, vice president; H. W. Campbell, secretary and treasurer, and C. Friderichsen, general manager.

NOTES FROM TIDEWATER, VA.

The Dupont Chemical Company has announced that the Hopewell China Corporation has purchased a Hopewell site for a plant for the manufacture of pottery, to begin operations about July 1.

Plans are under way for establishing a brick plant at Pennington Gap, Va. The project has been launched by the Young Men's Commercial Club in that town and already $10,000 has been subscribed toward the capital stock, which is to be $30,000.

Staley Babb of Suffolk, Va., is having clay tested and expects to build a new brick plant near Suffolk, Va.

James L. Bell, president of the Bell Hosiery Mills, Inc., of Suffolk, Va., has let the contract for a brick residence to cost about $40,000. This building will be faced with dark red rough-texture brick, made by The Milton Brick Company of Milton, Pa.

Dr. W. L. Thompson, Suffolk, Va., is building a handsome brick bungalow. The brick used on the face work are a dark red rough-texture brick, made by The Milton Brick Company of Milton, Pa.

The plant of the Virginia Brick Company, which has been shut down since last October, started up last week.

The demand for brick holds up well in this section. The demand is fully equal to the supply and prices are holding up to around $22.00 per M f. o. b. plants. H. L. J.

UNLOADING FOR THREE CENTS A TON

Brickmen are confronted today, not only with shortage of labor but the question of speeding production. Here's what the Portland Drain Tile Co., Portland, Ind., has to say about our **AUTOMATIC UNLOADER:** "Your machine has given complete satisfaction and we find it one of the **BEST LABOR SAVING** devices we have around our plant."

Poston Paving Brick Co. writes: "It has given absolute satisfaction and is a wonderful **TIME AND LABOR SAVER.**"

Cleveland Builders Supply & Brick Co. writes: "We find your machine performs exactly as represented by you and we are more than satisfied with results."

Probably we can help you as we have helped others. Write for catalogue anyway.

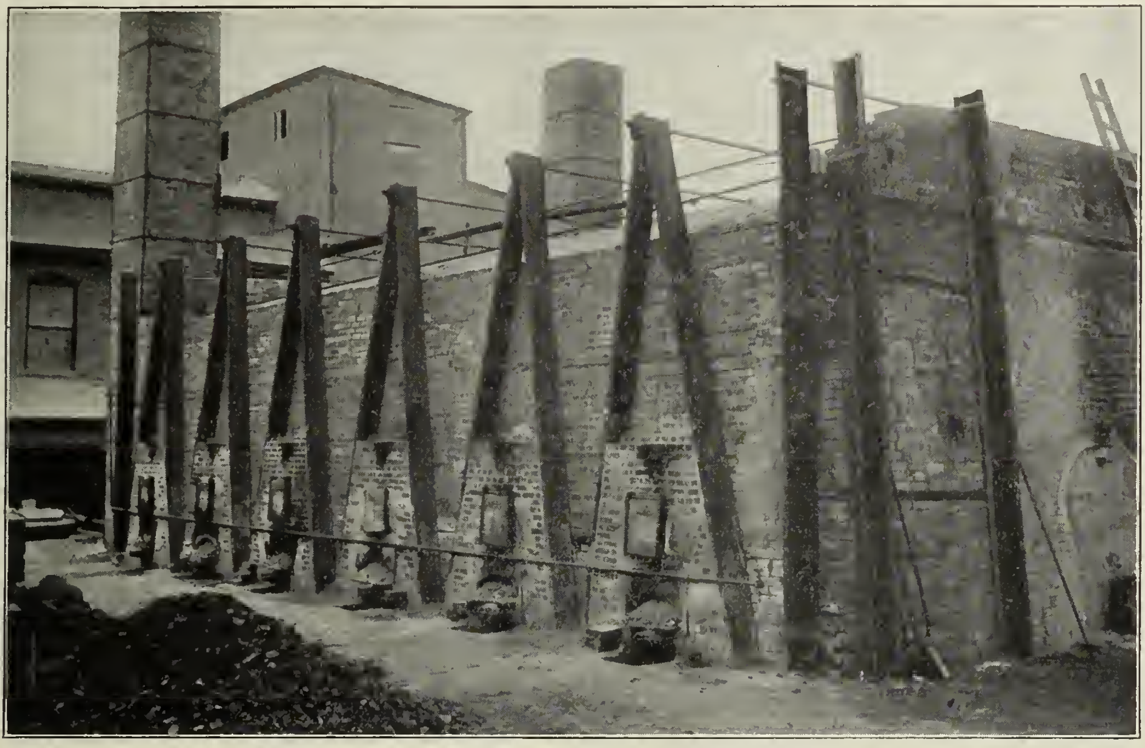
THE COLUMBUS CONVEYOR CO.

COLUMBUS, OHIO

This Picture Shows

An Installation Complete, Ready to Operate, of

Gas Producers Furnace



Furnace Gas Producers on Standard Brick Co. Kiln, Crawfordsville, Ind.

Note its Simplicity==Can be Installed Between Burns

25% to 45% SAVED

In Time and Fuel on Plants Now Using It.

Try it Out on One Kiln.

International Clay Machinery Co.

DAYTON, OHIO

Written for The Clay-Worker.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.

IT IS EXPECTED that there will be a great deal of building in Evansville and many other towns in southern Indiana, southern Illinois and western and northern Kentucky. John Andres, secretary and treasurer of the Standard Brick Manufacturing Company, at Evansville, says the brick manufacturers will have about all they can do this summer and fall. The main thing, according to manufacturers, is to produce enough to supply the demand. As stated in a previous letter to Clay-Worker, there is a good deal of factory building going on in Evansville and a great deal more is being planned. The biggest project in that city for this season will be the building of a hotel and theater building in Evansville that will cost in the neighborhood of $1,500,000. Benjamin Bosse, mayor of the city and a large furniture manufacturer, who is representing Chicago capitalists back of the project has taken options on three sites for the building. The proposed building will be from six to eight stories high.

The building permits for the city of Evansville during the month of March amounted to $69,635, which was an increase of more than $15,000 over the corresponding month of last year. It is expected that the permits for the month of April will show a big increase over those for April of 1919. While most of the building done in Evansville this season has been along commercial lines, a great deal of residence building is being planned, and it is believed that by fall the housing situation in that city will be greatly relieved. The West Side Investment and Real Estate Company of that city is arranging to build a number of homes this season that will help relieve the shortage of houses. The company has not built any houses for several years. Several other building companies and planing mill owners in Evansville also are building houses, most of them being turned over to owners, who will pay for them on the installment plan. Building operations in Tell City, Jasper, Petersburg, Mt. Vernon, Rockport and other towns in southern Indiana are looking up some. Prices of building materials are not going to get any cheaper, it is pointed out, and prospective builders who realize this are going ahead with their building programs. The contract for the new Pantheon Theater at Vincennes, to cost $127,000, has been let.

Plans have been drawn for the new school building at Mt. Vernon, which will be built with brick. The building will contain two class rooms, teachers' room, toilets and corridor on the first floor and a gymnasium with boiler and fuel rooms in the basement. The building will be 55 by 65 feet. A public school building will be erected this summer at Crothersville which will be of brick with four rooms. The store and residence of C. D. Schrieber at Tell City are being remodeled. A fine brick residence is being built for A. Bramstedt at Crossville, Ill. Work has started on the new building of the First National Bank at Mt. Carmel, Ill., which will be 45 by 75 feet.

The Owensboro Building and Loan Association of Owensboro, Ky., backed up by the Chamber of Commerce of that city, is arranging to pull off a "Own Your Home" campaign within a short time, which it is expected will greatly stimulate building in that city. Committees have been appointed and the drive will be launched within a short time. Other towns in western and northern Kentucky report that there is a great deal more building being done this season than last.

The Bocksting brick and tile factory at St. Meinrad, Ind., after making extensive improvements on the plant, is now in operation and has enough orders on hand to keep busy for some time to come.

Henry C. Kleymeyer, general manager of the Standard Brick Manufacturing Company at Evansville, has been made a member of the newly created traffic bureau of the Chamber of Commerce, which will handle traffic matters for the manufacturers and other shippers of that city.

Alhorn & Walker have recently installed some valuable new machinery at their tile and brick factory at Uniontown, Ky., and the plant now is in full operation.

Redman Bros. are planning a lot of improvements this spring in their brick and tile factory at Cynthiana, Ind. A new engine is being installed that is large enough to pull the new brick and tile mixing machine that the firm has purchased. With the new equipment they will be able to turn out more of their known products—brick and tile. The factory is one of the largest industries in the town of Cynthiana. The firm until recently was Redman & Co., but now the company is known as Redman Bros., being composed of Ralph and Doyle Redman. They have been engaged in business for a number of years.

Michael D. Helfrich, head of one of the largest potteries at Evansville, is building a fine new residence on West Heights, a suburb of that city.

The pottery plants at Evansville are being operated on fairly good time now and trade with the companies is more active than it was this time last year, and indications point to a good business all of this year.

Henry C. Kleymeyer, general manager, and John Andres, secretary and treasurer of the Standard Brick Manufacturing Company, at Evansville, are on committees to arrange for the next Evansville centennial. The first centennial held last fall brought about 50,000 visitors to the city and it is planned to make the exposition this year larger than the previous one, and plans already now are on foot to start preparations for the big show.

Brick manufacturers of Evansville and southern Indiana were much interested in the interstate good roads congress held in Evansville on April 22d, which brought visitors from several states. The question of good roads is one of vital importance to brick men. Many roads in southern Indiana, southern Illinois and western and northern Kentucky are being constructed this year.

The Best Brick Company, a new concern at Evansville, is expecting to do a nice business during the coming summer and fall.

The car shortage is worrying the brick and tile manufacturers of Evansville and many other towns in southern Indiana. The situation is said to be growing worse. Manufacturers had hoped that with the passing of the railroads back into the hands of the private owners that the car shortage situation would improve, but instead of improving the situation has grown worse, according to the opinion of many southern Indiana shippers.

A readjustment in working hours and pay was effected at the Standard Brick Manufacturing Company's plant at Evansville on April 8. Laborers received an increase of 5 cents an hour, the increase being from 35 to 40 cents, and an eight-hour day. The kiln firemen, who have been working twelve hours, were granted a nine-hour day and a wage increase of from 35 cents to 42 cents an hour. The rest of the work, which is mainly piece work, was practically increased 10 per cent., according to Henry C. Kleymeyer, general manager of the company. All the workmen at the plant were given a voluntary increase in wages on the first of March last.

The strike of the hod carriers at Evansville, which started on April 1, was settled Wednesday, April 7, after several conferences. The mortar men will receive 70 cents an hour, the scale they demanded, and the brick men will receive 65 cents an hour. The men formerly received 50 cents an hour with no distinction. No change in the forty-four-hour week schedule was made.

A HOOSIER.

The Modern Way

1. Only one central coal location
2. Clean kiln yard
3. No cleaning of furnaces or re-lining them, or bag walls ever required
4. Minimum labor attention and responsibility
5. Much shorter kiln burning periods
6. Heavy saving of fuel
7. Increased burning capacity without additional kilns.
8. A better and more uniformly burned product
9. Avoids smoke nuisance absolutely,
10. And many other advantages

The Old Way

1. Excessive and wasteful burning conditions
2. Requires wasteful manual labor
3. Longer kiln burning periods
4. Uncertain burning results
5. Expensive product wasted through improper burning
6. Heavy kiln repairs needed
7. Unsightly conditions, etc.

THE DAY OF FIRING KILNS BY HAND IS PAST

The Underwood Producer Gas System of Burning Clay Ware in Up-Draft and Down-Draft Kilns has proven that it is scientifically, theoretically, fundamentally correct.

This proof is indisputably established by the records made in many installations now in operation.

The problem of burning your ware is the greatest of all stages of manufacture. No committee can investigate all burning systems in use and report on all of them to each existing plant and advise what is best for each. But we will fully investigate your burning conditions if you will investigate the Producer Gas Burning System for periodic kilns. We will then compare our investigations and co-operate to solve your burning problem on the highest economical baseis.

If you want to reduce your burning costs, let us begin co-operating now.

Write for the interesting "Story of Clay."

The Manufacturers Equipment Co.

Dayton, Ohio, U.S.A.

Mention The Clay-Worker.

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BELT
FASTENERS
MAKE GOOD
BELTS GIVE
BETTER
SERVICE

They sustain the belt's full strength

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There's a Crescent booster near you. Write and we'll send you his name.

"-They make good Belts give better SERVICE"

— *Write to* — CRESCENT BELT FASTENER CO.
Write to our
CLAY PRODUCTS SERVICE DEPT.
for full information how Crescents will help you.
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—or ask your local dealer.

PHILADELPHIA CONCERN EXTENDING OPERATIONS.

The Brown Instrument Company, of Philadelphia, Pa., manufacturers of pyrometers, thermometers, and other indicating and heat recording instruments, is erecting two new buildings, one for the manufacture of recording thermometers and a second one to house the research department. The two buildings will cost approximately $100,000, but will give the company facilities to materially increase the output of Brown pyrometers and recording thermometers which have found great favor with the clayworking craft.

NATIONAL CHEMICAL ,EXPOSITION.

The National Exposition of Chemical Industries has gotten to work early this year and has already announced the sixth national exposition of these industries for Grand Central Palace, New York City, for September 20th, 1920. This exposition should be interesting to the clayworking and allied industries, both from the standpoint of exhibitors and visitors. So it will be well to mark up the date on your calendar and if you intend to be an exhibitor get in touch with the National Exposition of Chemical Industries, Grand Central Palace, New York City.

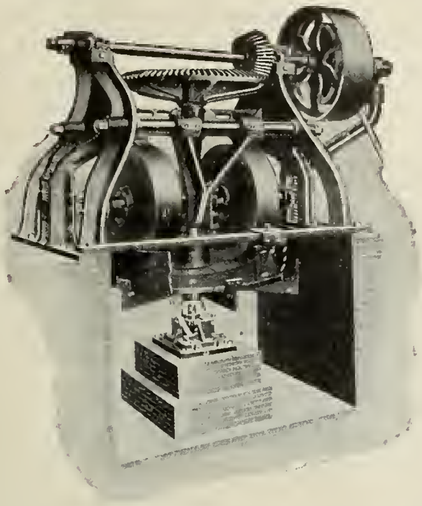
CONSTRUCTION WORK PROGRESSING ON ILLINOIS CLAY PLANTS.

J. W. Starbuck, one of the energetic representatives of the Manufacturers' Equipment Company, Dayton, Ohio, was a caller at The Clay-Worker office recently. He reports the work on the plants of the St. Anne Brick & Tile Company, St. Anne, Ill., as progressing nicely. A new plant will have a capacity of 60 tons of hollow tile per day, and the old plant which will be run on hollow tile and drain tile will have almost the same capacity. The company will manufacture a limited amount of brick. A. M. Duval, who has been with the Manufacturers' Equipment Company in the capacity of construction engineer, has charge of the construction of the plants. Mr. Duval has resigned his position with the Manufacturers' Equipment Company and will remain with the St. Anne Company permanently as general superintendent. He has had many years' experience in the clayworking field and is well fitted for the work. Mr. U. A. Coty is the general manager of the St. Anne Company. The Meyers plant at St. Anne is running to full capacity, and the prospects are that all the St. Anne plants will be run to full capacity right through the year, for Mr. Starbuck says the demand for building materials in that section is increasing steadily.

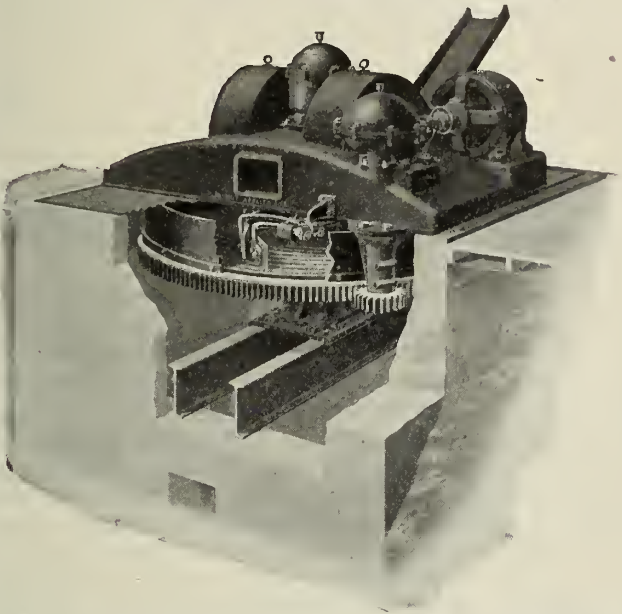
FIRE BRICK IN ARGENTINA.

There is something about the trade reports on fire brick in Argentina that does not sound right. A circular report from down there says that in the quinquennium immediately preceding the war Argentina imported 25,085,000 fire brick, of which Great Britain supplied 21,903,000; Germany, 1,430,000; Belgium, 735,000; United States, 720,000; France, 220,000. The importations during the war period were considerably less and Consul-General W. H. Robertson, of Buenos Ayres, says that American exporters find it difficult to compete in the trade down there largely owing to the great amount of British capital invested in railways and industrial companies in Argentina. This is a report that does not sound good and it should be a sort of battle cry to our refractory manufacturers to clear for action and get busy with their fire brick trade in Argentina. Logically the bulk of the trade should come to this country. Also the way to get it coming here is to go after it.

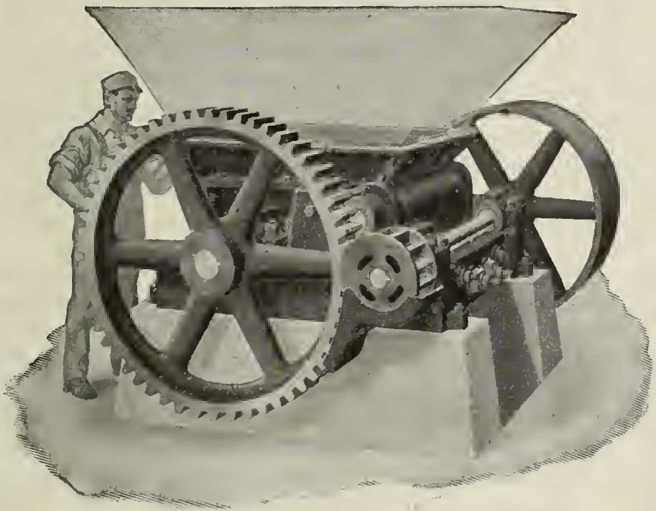
A little trouble is a good thing if taken as a tonic to stimulate action.



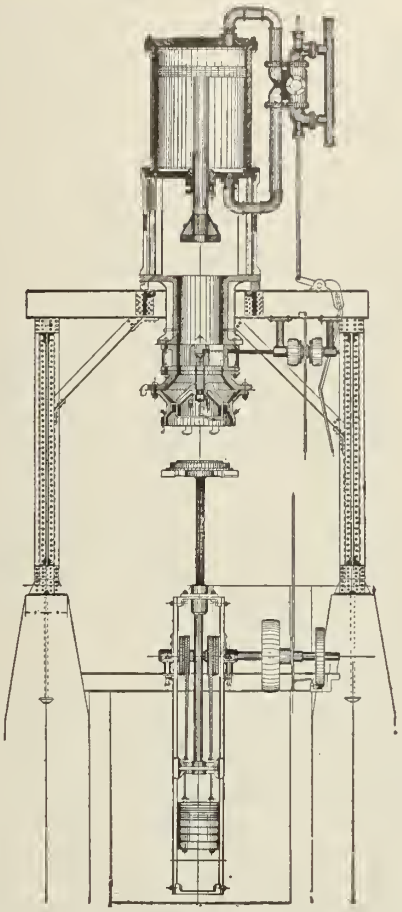
Standard Grinding Pans Made all Sizes



Model A-300 Step Bearing Type Dry and Semi Dry Grinding Pan



Single Roll Crusher



Sewer Pipe Press

Machines for
Crushing,
Grinding,
Pulverizing,
Empounding,
Tempering,
Mixing and for

Elevating and Conveying all kinds of Materials.

Steam Presses for Making Sewer Pipe, Drain Tile, Hollow Block, etc., are Manufactured by

THE STEVENSON CO.,

Gen'l Office and Works **Wellsville, Ohio**

Engineering and Western Sales Office,
Monadnock Bldg., Chicago, Ill.

SOME CAUSES FOR FIRE BRICK FAILURES.

(Continued from page 482.)

owner. Some want thick joints, some want them thin, some want them raked and some want them rough, but inasmuch as that joint is usually of cement, it is generally as strong as the brick and sometimes stronger. It, therefore, makes no difference in ordinary brick work, but it does make a vital difference in fire masonry. A great deal more care is necessary to make a good fire brick job than any other kind of brick work. The joints must be absolutely tight, the bonding of the brick must be regular and consistent. Each brick must be thoroughly bedded against the other and every precaution must be taken to prevent improper masonry and premature failure of the linings or arches.

5. We cannot impress upon you too strongly the importance of thoroughly drying a new lining before regular service is employed. The mortar, naturally, is wet and the brick being porous, absorb a large amount of moisture. Therefore, the joints as well as the outer portions of the brick are damp. In drying a certain amount of shrinkage will take place and this should be slow and regular. Overheating of the furnace before it is thoroughly dried out means cracked linings or arches and the utmost care should be taken and plenty of time permitted to slowly and thoroughly dry the work before the operation is started.

6. Proper provisions for combustion are very necessary to obtain the best service from fire brick linings. Many furnaces are constructed with a view of getting "maximum production" or operating at the "minimum cost." These, of course, are vital considerations, but we firmly believe that proper provisions for combustion are just as important. Everyone, of course, is looking for economy, which means maximum production at minimum cost, but if no consideration is given to combustion or proper outlet for heat, the fire brick linings will fail and the objects of the designer are defeated. One should not consider grate area without equal consideration of provisions for draft. Of course, if the draft passages are larger than necessary, maximum benefits will not be obtained from the heat produced, but on the other hand if the draft passages are too small, the heat is "bottled up" and the linings and arches fail under the "over-loads." It is, therefore, very necessary to consider combustion and the outlets for the heat just as fully as the grate area or the productive capacity of the unit. If any section of the draft passage is under size, the life of the lining is correspondingly reduced.

7. The selection of the material you propose to use in your equipment is most vital. A careful study should be made of the working conditions actually existing in each section or part of the equipment and fire brick should be selected to meet those particular conditions. The manufacturer will gladly assist in this work if you will give him an opportunity. At any rate, it is important that the conditions be studied and the material selected to suit them. Brick which give excellent service in one section of a furnace may fail in another one because they are not psysically or chemically suited to meet those conditions. Cheap fire brick often give better results than higher priced brick in certain places while in other sections of the furnace the highest priced ones are none too good.

8. We hesitate somewhat about bringing to your attention the importance of controlling the heat in your furnaces. Furnaces are generally built and lined to meet certain service conditions and for the best interest of all concerned, this temperature should be controlled so the furnace may never be overheated or the linings called upon to do service for which they are not intended. We are all human and "to err is human," but overheating a furnace or forcing it to do work beyond its capacity ruins the linings.

As we said in the early part of this pamphlet, a great deal has been said and some things have been written about fire brick failures, but very little has been written concerning their causes. It is no doubt true that many fire brick failures are due to inferior material, either in quality or in workmanship, but we firmly believe that many other causes contribute to these failures.

We have herein offered eight suggestions to improve the service obtained from fire brick linings. These are not all the causes for short life in furnace linings, but in our experience they are responsible for more than half of them.

In our investigations we have found fire brick of the best quality being unloaded in a very careless manner, and being handled as roughly as though they were paving brick. No consideration was given the cost of this material, or to the damage being done to the product for its future use.

We have observed millions of high priced fire brick stored in the open, exposed to rain, frost, snow, ice and the worst winter conditions.

We have observed the best quality of fire brick being laid in the cheapest fire clay and have often noted failures traceable to the use of salt, cement or lime in the mortar. We have found failures due absolutely to careless masonry or for lack of experience on the part of the workman.

We have found furnaces go to pieces in a very short time because they had not been thoroughly dried out before placing them in service. We have found this drying, in many cases, to be too rapid so that the bond was broken and the work made defective.

We have found arches and linings burned out quickly because of the failure of the designer to make adequate provisions for the escape of the gases, fumes and heat.

We have observed the use of the very highest heat resisting fire brick in places where heat was not a factor but where abrasion or slags ate out the linings. On the other hand we have noted the use of a brick made especially to resist slags and abrasion in a place where no such conditions prevailed but where the rapid variation of temperature "spalled" the brick and shortened the life of the roof.

We have observed that the overloading of a furnace has shortened the life of the linings or where the operator allowed the furnace temperature to get beyond the normal and it required only one experience of that nature to utterly destroy the furnace.

In conclusion we would say it is not our object to criticise. We offer these suggestions with the conviction that if they are studied carefully, the consumer will appreciate the importance of observing them as it will materially increase the service he obtains from his furnace linings. Our one and only object is to warn the consumer of these points and to assist, if possible, in increasing the life of the linings of any type of equipment where fire brick are used.

Please bear in mind we do not claim that these are the only causes for fire brick failures, but we say again they are "Some Causes for Fire Brick Failures." Additional information of this nature will be furnished from time to time by us and we solicit the co-operation of every fire brick consumer in our efforts to improve the service of our material.

The idea of attending conventions and conferences should not be confined to the heads of the industry, but should include those in charge of the various departments, because they, too, have an interest and deserve the same opportunity to learn new things from contact with the other fellows.

COME TO LANCASTER, PENNSYLVANIA.

SEE—the modern 50,000 daily capacity brick plant, soft mud sand molded process, that we are building for the LANCASTER BRICK COMPANY, INC.

MINING THE CLAY.

SEE—the Thew Automatic Electric Shovel in operation.

CLAY DELIVERY.

SEE—our two and one-half yard automatic end dump CLAY CARS, delivering the clay to our GRANULATOR.

CLAY PREPARING EQUIPMENT.

SEE—our heavy type GRANULATING CLAY FEEDER granulating the large lumps of clay, thoroughly mixing the clay in dry state as it comes from the clay bank and automatically feeding the crusher.

SEE—our big 24-inch COMPOUND DISINTEGRATOR and CRUSHER thoroughly disintegrate the clay and stone. This Crusher is the famous "Parry" design manufactured by us.

SEE—our steel frame CLAY DELIVERY CONVEYOR feeding the PUG MILL.

SEE—our heavy, all iron and steel PUG MILL directly connected to the BRICK MACHINE.

BRICK MAKING EQUIPMENT.

SEE—our 1920 model soft mud BRICK MACHINE with automatic self strike and automatic bumpers. A great big heavy powerful machine that will turn out the brick as fast as you want them, and stand up to the work.

DRYING EQUIPMENT.

SEE—the pallets of brick leaving the automatic dumping tables, and being automatically delivered to the two men in the Dryer who place the pallets of brick on the pipe rack shelves of our PIPE RACK DRYER, where they are dried tonight and set in the kiln tomorrow.

SEE—the splendid arrangement of our PIPE RACK DRYER building providing ideal working conditions for the men, and mechanically correct construction for the principles of drying.

SEE—the CAR SYSTEM taking the brick from the dryers to the kilns using labor that cannot physically handle a wheelbarrow.

SEE—the miscellaneous equipment furnished by us that completes the plant such as MOLD SANDERS, SAND GRINDER and SIFTER, TRANSFER CARS, KILN IRONS, ETC.

We have also designed and are now building a complete soft mud plant on the Hudson River, the Hackensack district, in Virginia and two large outfits in London, England.

We specialize exclusively on furnishing complete equipments for soft mud brick plants.

Our machinery is a development of the famous "Martin" machinery originated in 1858, and used successfully by brickmakers in every section of the country.

We carry a large stock of repair parts for the "Martin" machinery on hand at all times.

LANCASTER IRON WORKS, Inc.,

Lancaster, Pennsylvania.

Jas. P. Martin, Manager Clayworking Machinery Department.

New York Office,
501 Fifth Avenue.

Join the National Brick Manufacturers' Ass'n. Join the Common Brick Manufacturers' Ass'n.

WESTINGHOUSE OPENS LARGEST EMPLOYES CAFETERIA.

AN APRIL 6, when the largest industrial eating place in the world was officially opened by the Westinghouse Electric & Manufacturing Company at East Pittsburgh, Pa., evidence was given of what the larger manufacturers of today are doing in the way of providing for the comforts of their employes. This new cafeteria which is a three-story reinforced concrete and brick building, 236 ft. by 100 ft., has a seating capacity on the first two floors alone of nearly 2,600 persons. In addition, on the third floor is a dining room with a capacity of 500 and an auditorium with a seating capacity of 1,000.

One of the main features is the fact that there are no steps in the main part of the building. Gradual inclines or ramps are used exclusively in order to facilitate moving the diners from floor to floor.

The first and second floors are devoted to cafeteria service, a section being reserved for women employes of the company. By means of the auditorium on the third floor a suitable meeting place for the various employes' associations and organizations is obtained. The auditorium is equipped with a stage 26 ft. by 18 ft., complete with foot-lights, stage settings, and a convenient dressing room. A motor-driven motion picture machine of the very latest type is installed in an asbestos booth in the rear of the auditorium, and will be used in connection with various lectures, entertainments and other gatherings held under the auspices of the company—or some of its employes' organizations.

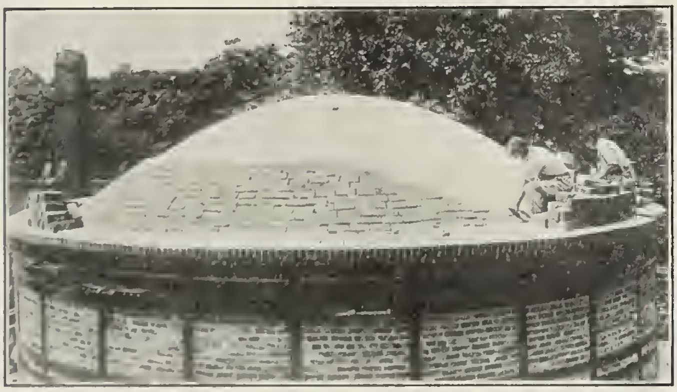
The cafeteria is equipped with the most modern labor-saving conveniences that are obtainable. On the first and second floors are eight service counters, 16 coffee urns, milk freezers with a capacity of 40 gallons each, and sanitary drinking fountains.

Soiled dishes are carried from the first and third floors to the second floor where two large motor-driven dish washers are installed, which wash and dry the dishes.

A portion of the first floor adjacent to the cafeteria is fitted up with a motor-driven washing machine, mangles, steam dryer for the purpose of washing and drying linens, motor-driven ice cream freezer with a capacity of 10 gallons and an ice-making machine with a capacity of 2,000 pounds every 12 hours. The ice manufactured is to be used for the purpose of packing ice cream, cooling butter, making iced tea, lemonade, etc. There is also an ice cream storage artificially cooled.

All food will be cooked on the third floor and will be supplied to the cafeteria by sub-conveyors. The kitchen is equipped with every possible method of convenience, including large gas ranges as well as double unit combination gas and coal ranges, steam meat roaster, steam service table, potato peeler which peels 40 pounds of potatoes in less than two minutes, bread cutter, potato masher, all motor-driven, and a coffee urn for dining room service. Two steam heated kettles with a capacity of 60 gallons each are used to make soup. Also, electrically heated pie baker with a capacity of 65 pies in 15 to 20 minutes, one large refrigerator for cooling meats and two smaller ones to cool vegetables and dairy products. All the refrigerators throughout the plant are cooled by brine pipes.

AN ECONOMICAL KILN TO OPERATE



Is one protected against heat losses by effective insulation.

An uninsulated kiln with crown and walls constantly radiating heat, not only consumes an excessive amount of fuel—constituting a serious waste—but also makes it difficult to obtain even temperature, resulting in uneven burnings and large rejection losses.

SIL-O-CEL
PREVENTS HEAT PENETRATION
TRADE MARK
MADE FROM CELITE

SIL-O-CEL insulation solves these problems. Applied to crowns, walls and bases of various types of kilns, it successfully reduces heat losses to a minimum, with an increase in capacity unobtainable prior to its application.

SIL-O-CEL has every qualification necessary for successful insulation: lightness of weight, variety of shapes, permanence, and, most important of all, the lowest factor of heat conductivity of any insulating material obtainable.

To request sample and literature incurs no obligation. Write to nearest office.

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MAY, 1920

THE CLAY-WORKER

DIXIE TEXTURE BRICK: A Beautiful Southern Home Which Exemplifies The Happy Combination of Beauty and Utility in Brick and Tile.—See Page 591.

Published Monthly by
T.A. RANDALL & CO.
INDIANAPOLIS, IND.
OFFICIAL ORGAN OF THE N.B.M.A.

Published monthly. Subscription price, $2.00 per year. Entered as second class matter, January, 1884, at the post office at Indianapolis, under the act of March 3, 1879. Title registered and contents Copyrighted by T. A. Randall & Co., 1919.

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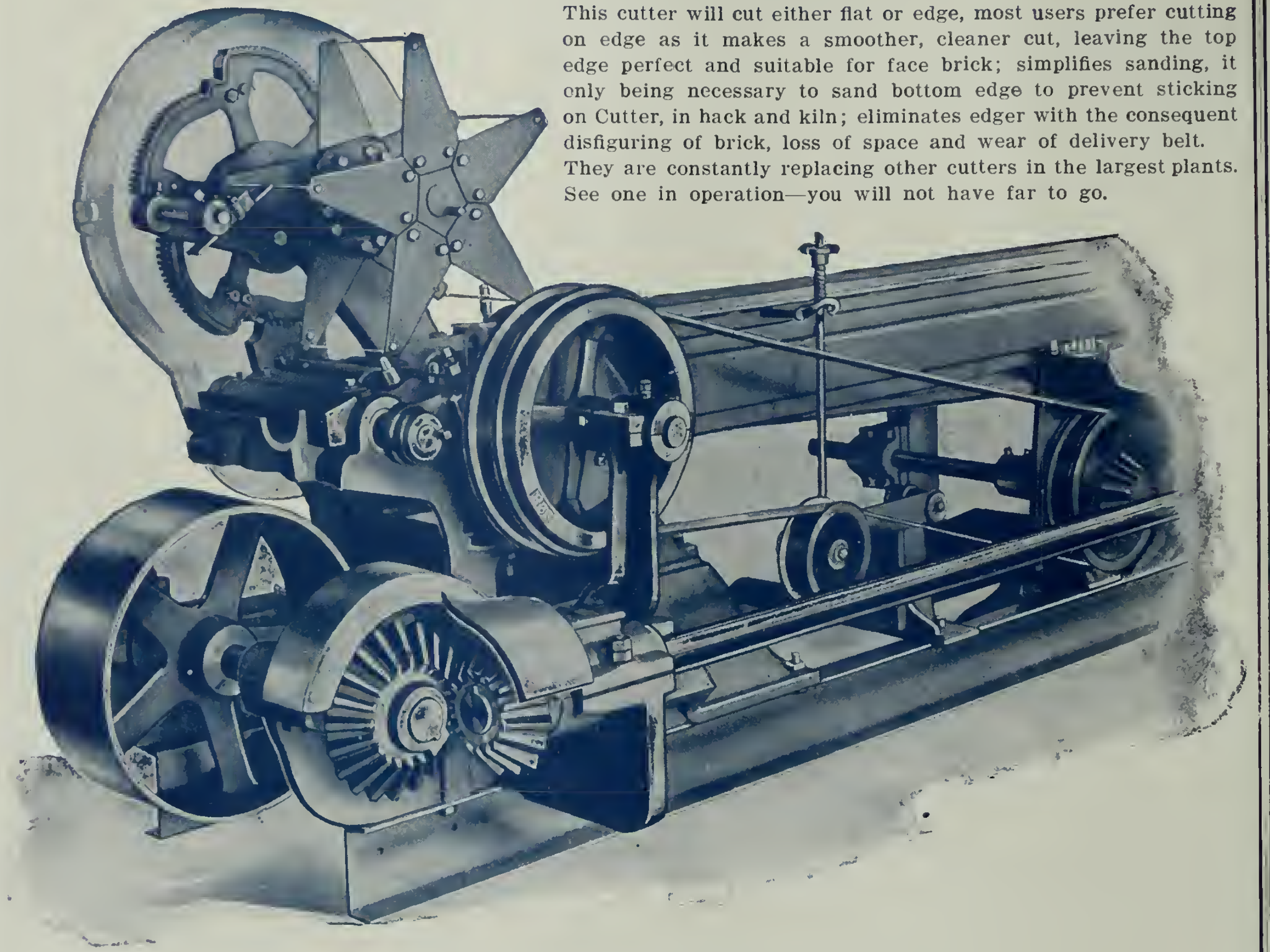
It Pays Well to Be On the Square,
Especially to Cut Your Brick Squarely

This is Exactly What the Steele Cutter Does and Continues to Do

This cutter will cut either flat or edge, most users prefer cutting on edge as it makes a smoother, cleaner cut, leaving the top edge perfect and suitable for face brick; simplifies sanding, it only being necessary to sand bottom edge to prevent sticking on Cutter, in hack and kiln; eliminates edger with the consequent disfiguring of brick, loss of space and wear of delivery belt. They are constantly replacing other cutters in the largest plants. See one in operation—you will not have far to go.



WHAT THEY SAY

Just a Few of Hundreds of the Same Kind We Have Received

W. E. DUNWODY, V. P., CHEROKEE BRICK CO., Macon, Ga.: "I think yours is the best cutter in existence. That is putting it about as strongly as I know how, and if you know any stronger way to put it, write me, and I will affix my signature."

BIBB BRICK CO., Macon, Ga.: "The two Rotary Automatic End Cutters installed for us about a year ago have given perfect satisfaction, and have not even required adjustment since putting them in. Our bricks are in much better shape than when we used the other cutters, cutting flatwise, the ends are always square, and bricks are not bruised as when we used edger. There is quite a saving in wires, as they do not break so frequently, cutting the narrow way."

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THE CLAY-WORKER

The Official Organ of the National Brick Manufacturers' Association of the United States of America.

Vol. 73. INDIANAPOLIS, MAY 1920. No. 6

DIXIE TEXTURE BRICK: The Oldest and Best of All Building Materials Modernized and Beautified. How They Are Made and Marketed.

SINCE THE TIME when the memory of man runneth not to the contrary, face brick have always been shipped from the West and North into the South. On various occasions in the past we have in these columns made mention of the progress and development of the little plant at Sumter, S. C., and it now affords us pleasure to state that they have accomplished the seeming impossibility of shipping brick not only into the heart of the face brick industry of this country, but to the New York and New England markets as well.

Dixie Texture brick are growing in public favor wherever used because of the unusual color effects secured. No matter what mortar is used, nor how the brick are laid in the wall, the effect is charming. There is a variety of tints and colors not heretofore produced in building brick that blends in a most pleasing manner and challenge the admiration of all lovers of the beautiful. We show two dwellings built of Dixie texture brick that give an idea of the charm, the abiding charm, of this modern product, that is beautifying the communities wherever used.

Delivering Dixie Texture Brick by Truck Express.

The Dixie texture brick is the result of the prseverance, industry and stick-to-it-iveness of Irving A. Ryttenberg and his partner, John P. Maurer. For a great many years this was nothing but a small common brick plant, but in 1901 Mr. Ryttenberg left New York to return to his old home in Sumter to start in the brick business in the employ of his uncle, who then owned the plant. After working there until 1906 the owner died and he bought the plant on credit. After struggling along by himself for a number of years he was joined by Mr. Maurer and the two of them have brought the plant to its present point of development.

When the Sumter Brick Works first started making face brick they could only find a limited market for them. Theirs was so entirely different from anything heretofore offered that it was a difficult proposition to sell any of the brick. It was here that the previous training of Mr. Ryttenberg as a salesman was used to advantage.

Just when they had things going good our entry into the war put a stop to all face brick business and they had to shut down the plant for a year. They started up in the spring of 1919 and determined to make the big plunge, gave up common brick business altogether and started to spread their Dixie Texture all over the map.

It is rather a strange thing about this brick. It seldom appeals to anyone in the individual sample and looks in the hand like an ordinary brick. Once laid in the wall, with the various shades blended together, it produces a beautiful, unique and artistic effect that is most pleasing. It has none of the harshness nor the coldness of so many of our clay products, but is warm and inviting, and as one architect expressed it, "The longer you live with them, the better you like them." To see purple, brown, gray, terra cotta, heliotrope and golden brown, all in the same kiln, is a sight to behold. Every brick is sprinkled with iron spots produced naturally. How this is done they will not say, other than to assure the trade that no artificial substance is used.

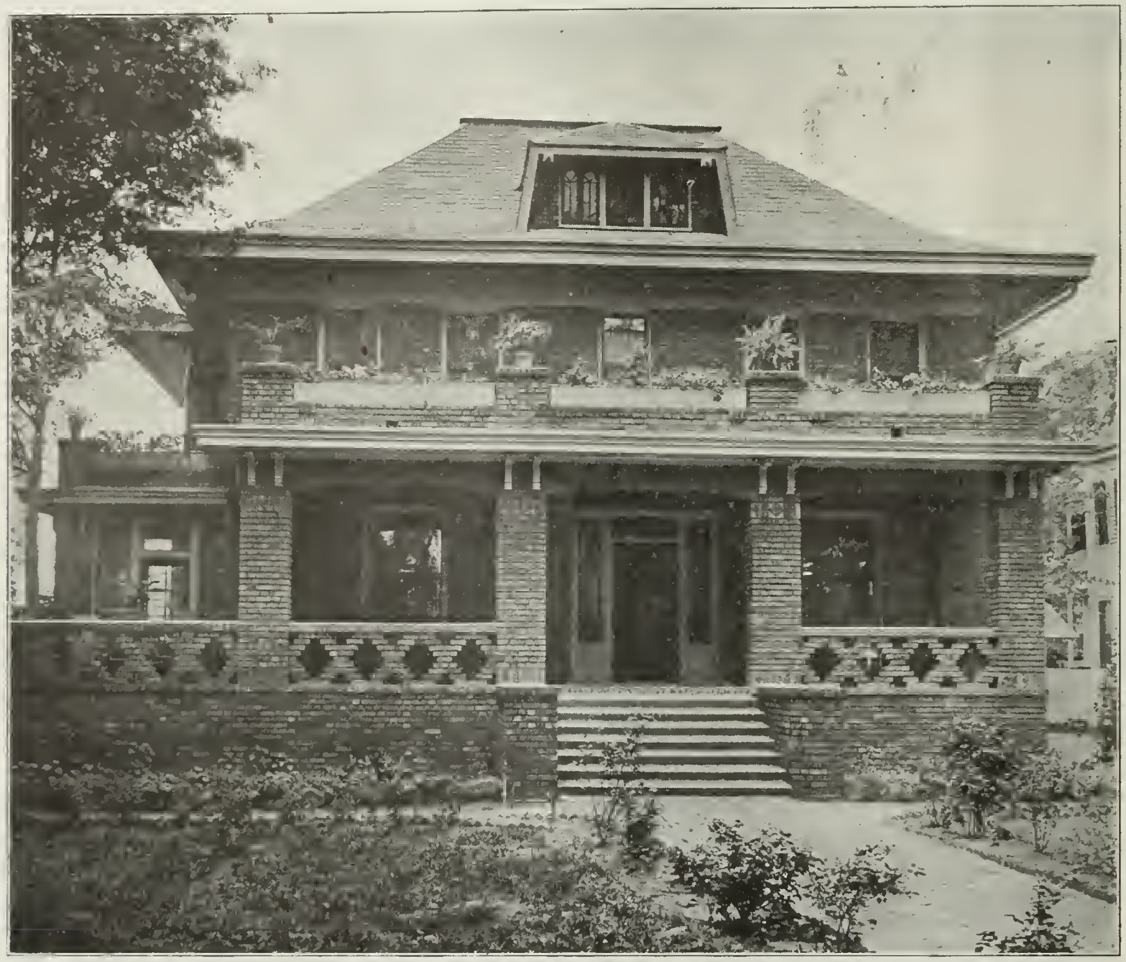
Starting in a small way in South Carolina, offering them at times at the price of selected common brick in order to introduce them, they have gradually widened the circle until in the past few years their brick have been shipped not only in North and South Carolina, but Georgia, Florida and Virginia.

Nineteen twenty finds them favorably known throughout the land, and a few months since they established a precedent for Southern brick manufacturers in making their initial shipment to New York City.

The Brick Plant, Its Equipment and Operation.

The plant is located at Sumter, S. C., which is some fifty miles east of Columbia the capital of the state. It is at a junction point of three trunk line railroads, the Southern, the Seaboard Air Line and the Atlantic Coast, so shipping facilities are of the best.

The clay is a surface deposit, gray in color, averaging six to seven feet in depth. They have a large acreage, sufficient to insure continuous operation for many years to come at the present rate of production, 10,000,000 face brick per annum. The clay is wonderful in several respects; it is easily worked, by the stiff clay process, the entire machinery equipment being supplied by Chambers Brothers Company, of Philadelphia. End cut bricks are made exclusively but finished as rough texture face brick. It proved a little tender in drying value, but this difficulty was overcome by the addition of a five foot Chambers dry pan, with which all the soft burned brick are ground and used as grog being mixed with the clay at the pug mill. A peculiar feature is that the brick expand in burning; when set forty-four courses high, the expansion averages six to seven inches. The clay requires a high temperature. The desired colors are obtained at a temperature of 2,500 to 2,600 degrees F. It requires more than 3,000 degrees F., to fuse the brick. The most wonderful thing about this clay is the great variety of colors to which it burns. Quite often two or three colors, or shades of colors may be seen in one brick.

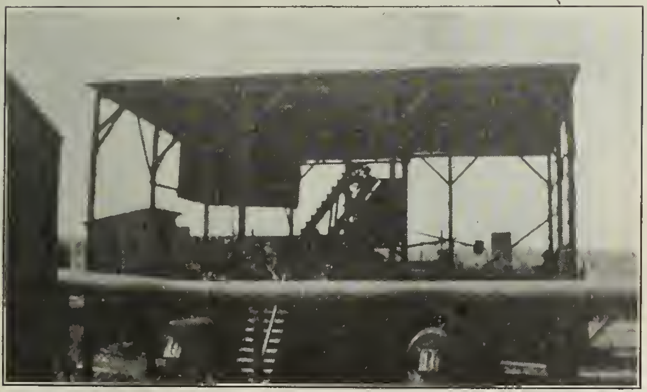


Residence Showing Polychrome Assortment of Dixie Texture Brick. Flemish Bond, Black Mortar, ⅝ Point Raked out ½ Inch.

There are four up draft kilns on the plant with a capacity ranging from 200,000 to 300,000 each. These are fired by producer gas installed by the Manufacturers Equipment Company of Dayton. Mr. I. A. Ryttenberg, the manager, attributes much of the success of the company to this system. They find that they get a much wider range or variety of colors than when they burned with coal. The producers are of the round steel water cooled type, lined with fire brick, each of ten ton capacity. These comprise a part of the Underwood gas producer system by which the time required to burn has been reduced one-half. Formerly it required ten to twelve days to furnish a kiln. Now, they burn in from four to five days, according to the size of the kiln. The coal required for the producers is handled on an elevator or hoist, which is operated either by electricity or gas as conditions require. By this means, the producer system of firing requires the services of five men, where formerly seventeen were employed.

The clay bank presents some unusual problems. Beneath the clay and sand there is a strata of quicksand, so it is not feasible to use steam shovel in the ordinary way. Instead it is operated from the top of the bank, an extra long dipper arm being required for that purpose. The steam shovel is operated by an engine which also operates the Davenport locomotive, which when a train of cars is filled hauls same to the plant, returning with the empties. The bricks are dried in a Standard ten track steam dryer, using exhaust steam in the daytime and live steam at night. Double deck dryer cars are used, holding 615 brick each.

Irving A. Ryttenberg.

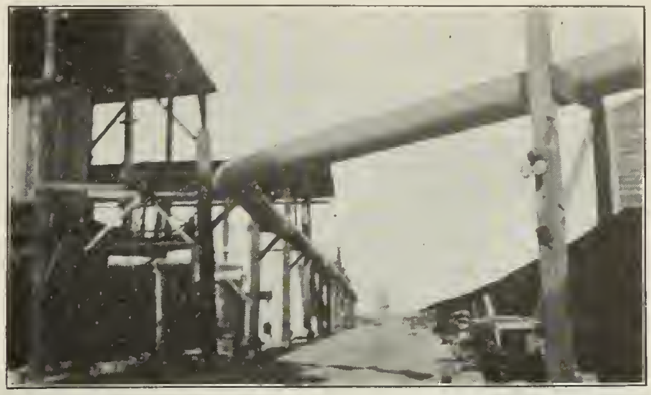


Producers and Producer Shed, Showing Elevator for Hoisting Coal to Firing Platform.

As previously stated, the manager of the plant, Mr. Irving A. Ryttenberg and his partner, Mr. John A. Maurer, are live wires and meet the emergencies of the business as they come to them. An instance is the manner in which an order was recently filled; it was a rush order from a customer way up in North Carolina, who was in urgent need of a couple thousand brick to complete a job. It was out of the question to ship the brick by rail, so they improvised a truck delivery and regardless of the embargo, bad roads, pouring rain and other difficuties, the brick were delivered by truck express in time to meet the requirements of the builder. The accompanying illustration shows the Indiana trucks ready to start on the journey with the necessary quota of Dixie textures.

NEW JERSEY'S CERAMIC SCHOOL.

NEW JERSEY'S ceramic building is an assured fact. The legislature passed a bill appropriating $100,000 to go toward it and the governor has signed it. The work of the Clay Workers' Association of New Jersey has been made effective and a building of sufficient capacity to house the school will be constructed in connection with Rutgers College at New Brunswick, as has been described in these columns heretofore.



Battery of Kilns, Showing Overhead Air Pipe for Burning System.

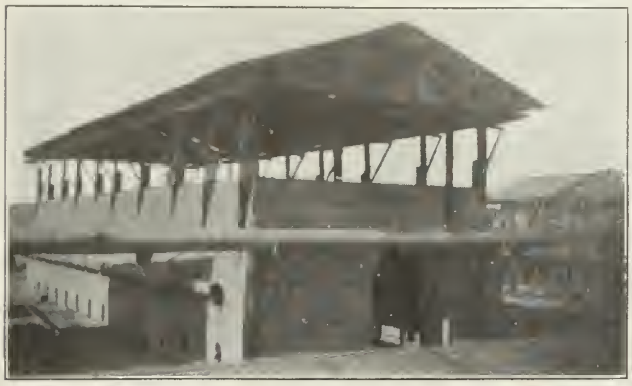
John P. Maurer.

Senator Thomas Brown, of Perth Amboy, introduced the bill early in the session and it was passed without serious opposition. Abel Hansen of the Ford Porcelain Works, Perth Amboy; Charles A. Bloomfield, of the Bloomfield Clay Company, Metuchen; Prof. George A. Brown, of Rutgers College, and a great many other members of the Clay Workers' Association of New Jersey were active in helping to secure the appropriation.

Plans for the building are already under way. While nothing is known of the details it is certain that the building will be worthy of the college of which it will be a part and of the industry it represents. Suitable class room, study and laboratory facilities are to be included, and these all will be fitted in the most modern manner. Further than that it is quite unnecessary to say now.

Prof. George H. Brown compiled some interesting facts concerning the ceramic industry which were effectively used among members of the legislature and others when the campaign for the building was in progress. This list includes these products:

Clays of all kinds, common brick, face brick, hollow brick, enamel brick, paving brick, fire brick, silica brick, magnesite brick, carborundum brick, fire proofing, sewer pipe, drain tile, roofing tile, glass pots, gas retorts, terra cotta, chemical stoneware, general stoneware, art pottery, art tile, porcelains, electrical porcelain, sanitary wares, wall tile, floor tile, spark plugs, emery wheels, carborundum wheels, enamels for cast iron, enamels for sheet steel, table glassware, window glass, plate glass, electrical glassware, optical glass, chemical glassware, art glass, fused silica, Portland cement, special cement, chinas, chemical porcelain. Reading this list shows how vitally the ceramic industry touches every family and every person in the land.



New Type of Up-Draft Kiln, Designed to Overcome the Expansion of the Brick in Burning. Observe the Buck Staves of Double 60 Pound Rail in Reinforced Concrete.

Underwood System Attached to Updraft Kiln, in Which 450,000 Brick are Burned at 2,600 Degrees in Five Days.

While the ceramic department of Rutgers College, under the direction of Prof. George H. Brown, has assumed a high standard in scholarship and in actual results, it has been inadequately housed and its facilities have been far too limited to enable it to perform its work as it should, when the importance of the industry in New Jersey is remembered. This development is worthy the industry, and the conditions under which Prof. Brown's department will work when the new building is completed will be so much better than they have been that the department will assume a fresh importance.

Since the war New Jersey has shown great advancement in the development of her clay industry. The inability to secure foreign clay supplies, hitherto thought essential in the manufacture of certain articles, has resulted in the discovery of suitable clays in this State, and they are now furnished in sufficient quantities to assure liberal output in the future.

A New Jersey clay is now used in the making of pencils. Formerly 90 per cent. of that grade came from Germany. Pyrometer tubes are successfully made from a New Jersey clay. Textile porcelain specialties are made from New Jersey clays, and a new factory is in process of erection at Trenton exclusively for this work. Spark plugs are made from Jersey clays and porcelain ball mills and linings for them are made from local clays. Probably more articles are included in this list, but these are sufficient to show the advancement in the local industry since the war stopped imports of clays heretofore used.

End View of New Type of Kiln.

A late estimate of the valuation of the plants now in operation in the State names $70,000,000 as a conservative statement of the actual investment in the important ceramic industries. The total output probably approximates $50,000,000 annually, and the number employed is around 20,000. As the business grows these figures must necessarily increase, more in some departments than others, but proportionately in all. The wisdom of the Legislature in granting a liberal appropriation for the erection of a suitable building cannot be questioned when these figures are studied.

When farmers bid three dollars a day for harvest hands and throw in a free barn dance two or three times a week, it is no wonder that the labor cost of the brick yard and of bricklaying runs higher.

Written for The Clay-Worker.

NEWS FROM THE NATIONAL CAPITAL.

According to statements of many brick manufacturers in the District of Columbia and nearby, common brick prices will most likely be again advanced in order to keep up with producing costs, which are steadily going ahead. At present the prices obtained here for common brick run from $2 to $4 below the level maintained in practically all of the eastern states, and fully $5 below New York state prices.

All of the plants in the District are busy with orders for present and 60 and 90 day deliveries, with excellent prospects that the heavy trade will run up well into the fall.

James E. Granbery, one of the best known brick and tile manufacturers in this section of the country, died on May 6, while undergoing an operation at one of the Washington hospitals. Mr. Granbery was president of the National Brick Company, which operates a large plant for manufacturing brick and tile at Terra Cotta, D. C., in the northern suburbs of the city, and maintains handsomely equipped offices in the Bond building here. He was a man of genial personality and was much beloved. Mr. Granbery was a high-degree Mason, and his funeral was conducted under Masonic auspices.

Test Kiln.

"The Evans Builders Co.," is the title of a new and well equipped concern here which has just entered the brick and clay products field, both as manufacturers and dealers. The new firm is under the immediate direction of J. A. Smith, Jr., well known in the brick industry hereabouts, who is vice-president of the company. A fine suite of offices has been opened in the Davidson building on G Street.

W. A. Mills, for a number of years engaged in brick and clay products salesmanship in Washington, has established himself in business on his own account and has opened offices in the Walker building on Fifteenth street, a half block from the United States Treasury. He is specializing on high-grade face and enamel brick and fire clay hollow building tile, representing a number of large eastern manufacturers in these lines.

The Chesapeake Fire Brick Co. is a new concern just incorporated under the laws of Maryland with a capital stock of $250,000. The officers are George S. Hoell, president, and Herbert L. Morris, secretary. The new company will operate in Maryland, just above Washington. It is said to have secured options on an extensive tract of clay deposits in Maryland.

The Peebles Paving Brick Co., of Portsmouth, Ohio, has submitted a petition to Congress protesting strongly against the passage of House bills 12,379 and 12,646, affecting the functions of Federal Reserve Banks. Representative Charles C. Kearns, of Ohio, presented the petition in the House, and it was referred to the committee on banks and currency.

The Bureau of Standards reports the results of an investigation of clay tile and reinforced concrete. The test load has been in place from two to four months on a 50x117 foot clay tile and reinforced concrete test slab. The bureau's report says: "There has been some increase in the tensile stresses in the negative reinforcement caused by standing under load for this length of time, and the stresses for the negative movement are generally near the yield point of the steel. In square panels, the total resisting moment in the slab for a full panel width, which can be accounted for by tension in the reinforcement, was less than 1/48 of the total live and dead panel load multiplied by the span measured from center to center of the supporting girders. A very few small cracks have developed. The load is now being shifted in an effort to increase the positive moment without increasing the negative one. The purpose of this is to break the tensile resistance in positions of positive moment before passing the yield point of the steel generally in the positions of negative moment."

ALTHOMAR.

Bird's Eye View of the Plant of the Sumter, S. C., Brick Works.

A BY-PRODUCT OF ADVERTISING.

One of the interesting resultant by-products of advertising or a general program of publicity is in that when you get busy at thinking and talking about a product for publicity you immediately begin to have visions of new uses, new markets, features and possibilities that you have never dreamed of before. In other words, preparing to teach somebody about a product is the best way to learn more about it yourself.

POTTERY MAKING IN JAPAN.

Interesting Methods of Pottery Mannfacture that have Prevailed in the "Land of Cherry Blossoms" for Ages Soon to Give Way to Modern Processes.

COMMERCIAL ATTACHE James F. Abbott has written for the Consular Reports, an interesting and somewhat lengthy description of the commercial pottery industry of Japan in which he describes the manufacturing process as well as the development of the industry and the export trade.

First he points out that it is characteristic of the Japanese ceramics that the numerous varieties have always been distinguished from one another geographically rather than technically. Thus Satsuma ware, Imari ware, Awata ware, etc., names well known to foreign connoisseurs, refers to the districts in which the pottery is made. In fact, the common Japanese word for pottery "Seto-mono" is derived from the town of Seto in Aichi-Ken, most famous of all for its wares. Much as our English word China is reminiscent of the country where the product originated.

Classification of Products.

The Japanese pottery products, he says, may be classed roughly in three groups, stoneware, including tiles and various utility vessels, usually glazed and ornamented only by stamping or scoring made in many parts of Japan and chiefly consumed locally.

2. Faience, such as Satsuma and Awata ware, most often with a crackle glaze, and highly decorated. It is not fired at so high a temperature as porcelain and is consequently softer and more fragile; but, for the same reason, more delicate colors may be used in decoration. Much of this sort of ware has found its way abroad under the designation of "curios."

3. Hard porcelain and semiporcelain (Kutani among the coarser wares and Seto, Imari and Kiyo midzu among the finer).

The porcelain of Japan is made in a different way from that of China. Having been fashioned, it is baked in a biscuit state, then painted with such colors as require a great heat and the glaze applied, then burnt again at a much higher temperature; any further decoration in enamel colors or gilding is subsequently fired in a muffle kiln. These numerous firings are less tenacious than those used in China, hence Japanese specimens are frequently slightly out of shape.

The Raw Material of Japan.

The earths used in the manufacture of commercial pottery may be divided into two general groups, technically known as kaolin and clay, the former being decomposed feldspathic matter contained in granite rock, and the latter being an alluvial deposit. Chemically they are similar, but physically they have different characteristics. In Japan is found a third variety, known as "rock clay" or "porcelain stone." This appears to be of similar construction to the kaolin, but decomposition has not gone to the extent of complete disintegration of the rock.

Kaolin for the potter's use is mined and washed in the same general manner in different parts of Japan. It is found in deposits in the high hills surrounding the town of Yamaguchi and is mined by tunneling. The kaolin is loaded on small cars within the mine and run either to a dump at the mouth of the tunnel or directly to washing machines located in building a few hundred yards distant. The kaolin is dumped on a platform and from there shoveled into a horizontal washing machine which consists of a barrel-shaped tub filled with water, about 12 feet long and 6 feet in diameter. Within this barrel is a revolving horizontal shaft to which arms are attached for the purpose of breaking up the mass.

Kaolin Treatment.

The crude material as it comes from the mill consists of certain percentages of kaolin, quartz sand, and mica suspended in water. The particles are separated during the mixing process, and as they are discharged from the mixer the quartz, being heavier than the kaolin, is deposited in a vat or tank. The remaining kaolin and mica is then run through long troughs, which are divided into branches in order sufficiently to retard the flow of the mixture to permit the mica, which is lighter than the kaolin, to float off upon the surface of the water. The kaolin mixture is then run into large vats or tanks made of cement. The kaolin remains in suspension for a considerable time, but when sufficiently settled the surface water is drawn from the tanks and the residue pumped by hydraulic pumps into iron filter presses. As it leaves the presses the kaolin has the form of large circular cakes, similar in appearance to putty, which are placed on boards in open-air drying sheds or, in good weather, laid on racks exposed to the sun. When thoroughly dry these cakes are ready for market. The present laid-down cost of this material at the factory is $18 per ton. In the Yamaguchi district the percentage of waste is extremely great, the actual amount of usable kaolin being only 16 per cent. of the entire mass that comes from the mine.

The sand washings from this mass are used to a limited extent in the steel mills and in the manufacture of fire brick, but the great bulk is thrown on dumps unutilized.

Porcelain Stone and Saggar Clay.

Porcelain stone, which is similar in appearance to the English Cornwall stone, is found in great deposits in the Arita district, similar to deposits which are found in Missouri. It is obtained from large quarries and for local use is reduced chiefly by means of clumsy stamp mills run by water power like those for milling rice. The material contains little or no mica, it consists of a silicate of aluminum in a physical condition between that of feldspar and kaolin, together with quartz sand and is in itself capable of being made into the chinaware without the admixture of other materials. Commercially, however, this is not practicable because of the fact that the various percentages of ingredients are not uniform. It is also very susceptible to varying kiln temperatures and has a limited range of fusibility.

All china wares are made of one or more of the kaolins described but it has been found that the English kaolin or china clay must be used to obtain the finest and whitest china. This is mixed and prepared in Cornwall, England, and costs the Japanese manufacturer approximately $40 per ton delivered. The wages of the men employed in the preparation of these materials at the present time are 60 cents per day of 12 hours.

The Saggas clays of Japan are inferior to those found in America, being low in plasticity and as a consequence there is a much greater percentage of loss in firing. It is said that approximately 40 per cent. of the Saggars break in each firing, and that it is necessary to add some other material to counteract the excessive contraction of clay under fire. In Japan as elsewhere the old cracked Saggars are used for this being broken up and coarsely ground to the size of a small pea as a maximum.

Decalcomania From America.

Plaster of paris is said to be one of the most important of the materials used indirectly in the manufacture of chinaware because it is from this molds are made in which to cast the ware. This is made locally but its quality is such that for the best work imported material is used which comes from America and costs about $9.70 per barrel of 224 pounds.

The bulk of the decorating pigments and the finest colors come largely from England, formerly from Germany. The decalcomania sheets which were formerly imported almost exclusively from Germany are now coming principally from America. Some are being made in Japan, but it seems that the American article is better.

In the old style Japanese pottery the glaze is compounded of carefully prepared clay paste mixed with wood ashes, usually oak and chestnut, and the details of this mixture are usually held as trade secrets. In the more modern factories, however, the same sort of lead glaze is used as in Europe and America.

A Community Industry.

The great bulk of the chinaware produced in Japan is made by the old methods of manufacture and to a very considerable degree is a household or community industry. For example, in the Sata district one family will be found making the models and molds. On the village streets one can see these molds being carried by hand on boards to another household where they will be used for the forming of the ware. Cups and saucers are produced in large quantities in this district, one man being able to produce by casting 2,000 cups per day; but the quality is very poor. When the ware is ready for burning it is taken to the kiln. All tableware undergoes two fires, the first being a low degree of heat known as the "biscuit fire," which thoroughly dries and hardens the ware so that it can be handled with safety, and which also enables underglaze decorations to be applied. The ware that has gone through the "biscuit fire" is dipped in a glaze which is practically a liquid glass composed of feldspar, lead, clay, flint, and, in some cases, a frit composed of borax and flint.

Methods of Constructing and Firing Old-Style Kilns.

The old type of Japanese kiln is unique. They are built on the side of a hill in separate units, according to the requirements of the individual or the community. In some cases there is but one kiln, and it is built at the bottom of the hill. As the factory enlarges, another unit is added to the side of the first kiln and at a higher level, according to the incline of the hill. As the kilns increase in number they also become of larger dimensions. The kiln resembles in shape the inside of the ordinary muffle or decorating kiln in the United States. The floor is usually covered with sand, and the firing is not begun until all the kilns have been filled with ware. The fire is started in the kiln at the bottom of the hill, the heat entering from fire boxes which extend the entire width of the kiln near the boundary between the two arches. Each kiln has a draft hole halfway up the side, above the hole where the fire is fed. The direct brunt of the heat is taken by a fire-brick wall. The flame and heat, circulating about the rounded roof of the kiln, pass into the kiln next above through a series of openings on the level of the floor of that kiln. The heat passes from one kiln to the other, the surplus from one drying out and warming the contents in the following kiln. Wood is used entirely in firing the kilns and is delivered to the kiln burner in bundles, each stick being about the size of a man's wrist and about 15 inches in length. The kilns are fed from either side through a small hole less than 1 foot in diameter, the tender putting in a stick at a time, this being a continuous process. The steady demand for wood has stripped the adjacent countryside of forest, and the cost of fuel is very high. Four bundles of wood, altogether about 3 cubic feet, cost 1 yen ($0.4985), four times the pre-war cost. The firing of each furnace costs about 500 yen ($250).

The heat is intense, approximating a No. 16 cone. As each kiln acquires the desired heat the feeding is discontinued, and the firemen proceed to the next kiln above, which has already acquired sufficient heat to ignite the wood. By the time the third kiln is fired the first one has cooled sufficiently to permit the ware to be taken from it. These kilns are a crude form of the German Hoffman kiln.

As the ware is taken from the kilns it is ready for the market or for the decorating shop, as the owner may elect. Wares produced by community kilns are usually marketed through merchants in the central village. In such a community we find potters of all degrees, from the individual making special articles and having them burned by the owner of the community kiln to the manufacturer who has his own shops and his own kiln or kilns.

Modern Pottery Manufacture.

The aggregate production of the numerous pottery villages in Japan amounts to a considerable figure, and much of it finds its way into the channels of foreign trade. Nevertheless, with the cost of living increasing in Japan by leaps and bounds and with labor costs rising in proportion, the day is not far distant when the highly organized and efficiently conducted modern pottery, with its labor-saving machinery and its ability to reduce costs by quantity production, will supersede the cottage and community system. The Japanese have not been slow in appreciating this tendency. In Nagoya, the center of the industry in Japan, a modern pottery has been built on the most up-to-date lines. Upon entering a modern plant one is at first struck with the fact that labor is still by no means considered the first and greatest factor in costs. Every ton of material is brought to the factory by man power. There is no railroad siding. All the materials, bulky as they are in the pottery industry, such as clay, feldspar, flint, wood, and coal, are carted in small one-horse wagons, each horse being led by a man. Such materials as come in bulk are piled on the wagon in shallow tray-like baskets, each containing an amount convenient for a man to carry. The second thing particularly noticeable is the large amount of hand labor employed in the breaking up and sorting of the raw materials, and also the exceedingly minute care taken in removing any foreign matter from the broken mass.

Saggars, as explained above, are the fire-clay cases into which the ware is placed for burning. Setters are fire-clay disks, or very low saggars, capable of holding but one plate or dish. In the Nagoya factory the saggars and setters are made in saggar machines varying in size according to the size of the article required. These machines consist of steel dies which squeeze the clay into the desired shape, the pressure being applied by a screw press.

Methods of Manufacture in Modern Japanese Pottery.

The same method used in other countries for the making or forming of the wares is in vogue in this factory, namely, pressing, casting, hollow-ware jigging, flatware jigging, throwing, and turning. The casting process is more largely used than that of pressing.

The ware, when ready for the first fire, is taken to the second floor and placed in the upper chamber of the kiln. It is then piled on tiers of bats supported by heavy clay props, as is usually done in decorating kilns in America. The central part of the kiln is used for burning the saggars in their clay

(Continued on page 646.)

Burning Clay Wares

by

Ellis Lovejoy

Written for The Clay-Worker.

THE CLAY-WORKER.

PART XLVIII.

OTHER CAR TUNNEL KILNS.

ANOTHER car tunnel kiln which is finding use in this country is illustrated in Fig. 194, a cross section through the cooling zone looking toward the furnace zone. The kiln is very simple. It has a straight tunnel except an enlarged section for the furnaces. There is no sand seal, but instead the car furniture recesses loosely into a groove in the side walls. The furnace section is simply a wider span overlapping the tunnel width, which is boxed in on sides and ends to form a combustion box on each side of the kiln. The fires are in the ends of this box and the flame is parallel with the moving cars until deflected by the furnace crown. In several installations there are no flash or perforated walls between the firebox and the tunnel. In fact it is said that the curved crown of the furnace section reflects the heat to the ware to better purpose than is possible through direction by means of flash walls.

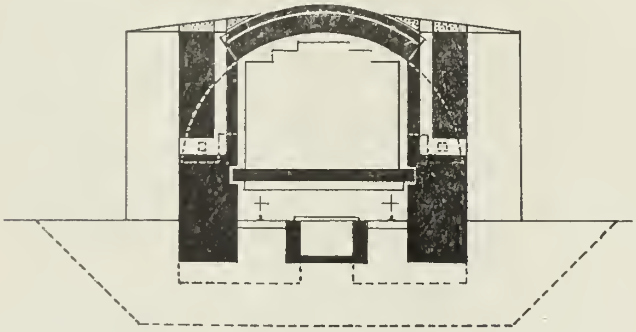


Figure 194.

Under the hot sections of the kiln and underneath the cars is a longitudinal open duct which is connected with the outside air by under cross ducts with vertical risers to the ground level outside the kiln wall. The connection between the cross duct and the longitudinal duct is dampered, and the only air normally entering the longitudinal duct is by leakage, but this can be increased to any degree by opening the damper connection. The purpose of these ducts is to supply sufficient air to protect the cars, and this air, since there is no sand seal, rises into the tunnel proper. It is, therefore, desirable that the volume of air entering in this way should be kept to a minimum, and this will depend upon the amount required to keep the cars cool.

The walls of the cooling end of the kiln are of a hollow construction and the vertical flues formed within the walls by this construction are open to the air on top, and likewise at the bottom through ports in the outside wall. The outside air, thus, can freely enter these wall flues at the bottom, and naturally rising, it escapes through the top ports.

The inwall is made thin and the heat from the cooling ware is conducted through the wall, picked up by the air currents in the wall flues and removed from the kiln. No use is made of this waste heat except as it serves to heat the factory in cold weather, but, of course, it could be readily collected and applied to any purpose in the factory operation, or be carried forward and used in the furnaces. In one plan provision is made for the use of the air in the combustion by simply collecting it by down draft into a flue and carrying it forward to the furnace. This provision, however, has not been installed in the kiln in question.

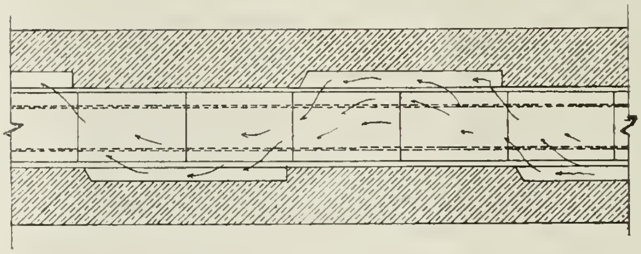


Figure 195.

In the pre-heating end there are several openings at intervals into the stack ducts, and by dampering the gases may be drawn off before reaching the end of the kiln, or they may be carried to the end, thus shortening or extending the temperature conditions in the pre-heating end of the kiln.

Another kiln has combustion chambers or tubes on each side of the ware, in principle equivalent to the Dressler; namely, that the combustion takes place in a tube, and the ware is burned by convection of the heat conducted through the tube walls. Instead of using the double-walled combustion and circulating construction, extending it to the end of the kiln by a simple duct and tubes, as in the Dressler, the combustion gases are taken through economizers on top of the kiln, and the air for combustion is drawn from these economizers and delivered to the burners and into the combustion tubes. Hot air is also drawn from the economizers and delivered into the tunnel under the combustion tubes, circulating around them, then over and down among the ware, and finally it is drawn off through the car floor and out of the kiln, and may be returned to the economizer, thus making a complete circuit. The claim is made that the positive circulation around the combustion tubes and among the ware is essential to uniform results, but the equipment is complicated and if results can be obtained with a simpler arrangement, as they seem to be, the advantages will be decidedly in favor of the simple construction.

Another kiln in use for pottery is a simple tunnel with an enlarged section for the combustion chamber.

The latter has no flash walls, but instead the aim of the construction is to direct the gases among the ware by means of deflecting walls which also serve as radiating surfaces. The deflection idea is carried out in the cooling end of the kiln from the furnaces to the outlets into the draft stack by a staggered wall construction, illustrated in the partial view plan, Fig. 195. Gases naturally find their way into the largest unobstructed channels. This is taken advantage of by building for a short distance one side wall close to the car of ware with the opposite wall set back to give some free area between the ware and this side wall. This construction is reversed in the following section and thus alternating to the draft escapes. At the end of each section there is a tendency for the waste gases to cross the tunnel to the free space on the opposite side and thus in some measure at least bring the waste gases in intimate contact with all the ware.

In the cooling end of the kiln the walls are solid and insulated, but the crown is made thin and is boxed in and the air passing through the duct thus formed is heated by the heat from the kiln crown. The air is forced through the box duct by a fan placed at the delivery end of the kiln, divided near the furnaces and conducted to the furnaces on either side of the kiln. The combustion section of the kiln is wider than the tunnel proper and extends beyond the tunnel walls and the furnace ports are in the end walls of the combustion section instead of being in the side walls. By this arrangement the flame is parallel to the longitudinal axis of the kiln and does not impinge directly on the ware as would in the case of cross fires through ports in the side wall, but instead strikes the deflecting and spreading walls and thence is diverted to the ware. The kiln has the usual sand seals and the car structures are cooled by jets of air under pressure.

There is an interesting car tunnel kiln in successful operation on small pieces of electrical porcelain. The ware is placed on fire clay trays on the cars. The kiln is an open fire type, but instead of a direct flame contact the heat is deflected to the ware which is exposed to the combustion gases. It may be noted that two of the kilns previously mentioned make use of deflected heat.

The car tunnel kiln is developing along three lines:

(1) The open fire kiln with the combustion gases in direct contact with the ware, and the latter may be in open setting or enclosed in saggers.

(2) The open fire kiln in which deflecting walls are used to direct the combustion gases to the ware set either exposed or in saggers.

(3) The muffled kiln in which the ware may be set in saggers but only as a matter of convenience in handling it.

The first two types are very closely akin. The same kiln may have a perforated flash wall between the furnace and the ware and thus operate on the principle of the first type, or the perforated wall may be removed and deflecting walls built in such a way as to deflect the gases from their natural course down on or among the ware.

LOADING BRICK BY THE SWITCH-BACK RAILWAY

By Robert Twells, Alton Park, Tennessee.

HOW TO GET the brick loaded is the greatest problem which confronts many manufacturers today. No one wants to push the wheelbarrow, they would rather ride. So why not make it possible for them to hop in behind their load?

These last few years have brought out many devices for handling brick; first of these are the different types of conveyors, all of which have a place and fill a long felt want, but that I will leave to the manufacturers to praise their own appliances.

Then there is the small motor truck with its many possibilities. No doubt a wide field of usefulness awaits it, and there is plenty of room for all labor-saving machinery that can possibly be devised; it is only a matter of deciding which kind is best adapted for a certain particular job.

The object of this paper is to suggest an entirely different method of handling brick.

The idea is borrowed from the switch-back railway, at least as much of it as would suit our purpose. We would use a flat top truck about twenty-four inches wide and five or six feet long, with moveable ends and no sides, a rear platform twelve inches wide would project out behind, on which a man can stand; the car would be well under control of brakes, the lever which operated them would be in reach of the man on the back platform—the wheels of the car would be near each other, which would enable the car to go around the curve.

How to Operate the Car.

A track would be laid into the kiln in short sections, each section being added to as the kiln got emptied. This track should be laid with a slight slant upward into the kiln, this would enable the care to be pushed out easily, but the track must not rise too much, or it will be hard to push the empty car back in.

The car having been loaded with five hundred building brick or their equivalent in weight in paving brick, or other clayware, would be pushed out of the kiln for about ten feet when, if the lay of the land did not permit it to travel any further by gravity, it would by mechanical power be pushed up an incline track to a rise of say thirty-six inches more or less, which would enable it to travel as far as required by gravity. It should only be elevated high enough to insure its return to the lower level from which it came out of the kiln. One of the men which loaded the brick should push the loaded car out and should ride on the rear platform of the car and with the brake guide the car around any curve or through any switch to the place where it is to be emptied, he should help to empty it and then ride it in on return trip for another load.

As many cars as desired could be operated, and the loads could, through a system of switches, go to any number of different cars or piles. The track could be arranged to cross over slightly above an open top car where the brick could be either dumped or piled in.

In going into a box car, either a short curve, portable turn table or portable transfer could be used in the car.

The advantage of this system would be the very low cost of construction and the very low cost of power, also the very low cost of upkeep; no skilled workmen would be required to operate; the risk is small, as the operator would stand behind his car when in motion and his brake must be such that he can stop it at a moment's notice.

This article does not go into detail, but is a seed of thought which is sown on a fertile field, and if it shall lead to the lifting of a load of care off an employer's mind, or if it will help in any way to lighten the burden of the sons of toil, the writer will feel that his effort has been rewarded.

EDUCATIONAL EXPLOITATION OF HOLLOW TILE

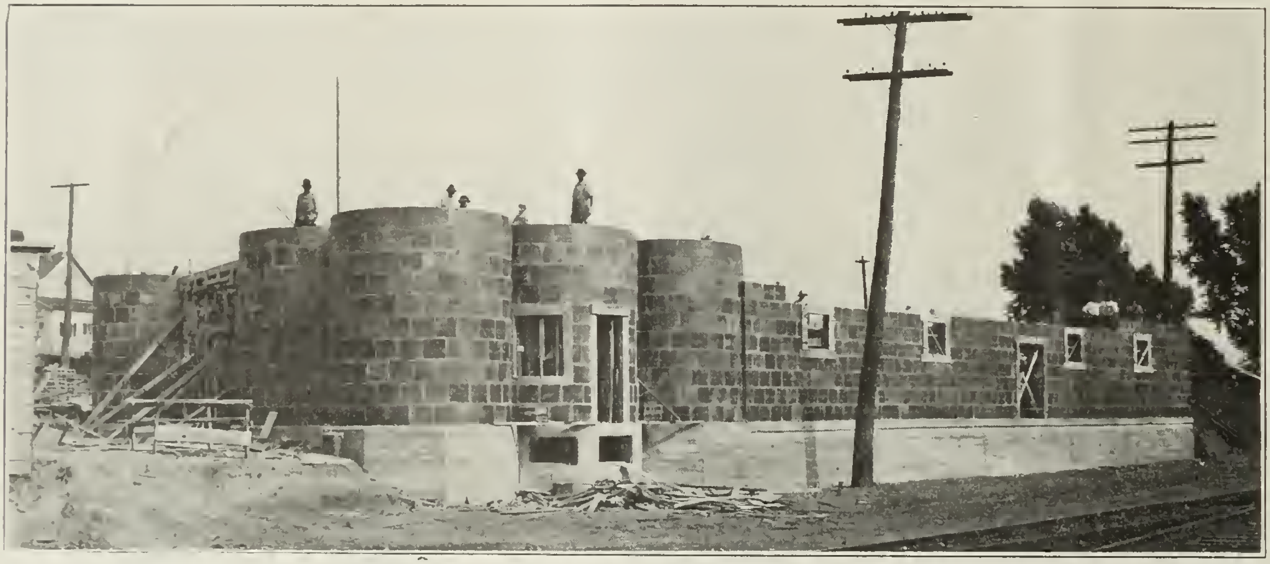
Hollow Building Tile Association and Individual Concerns Doing Commendable Work in Getting the Merits of Hollow Tile Before the Public Eye.

THERE is a campaign of educational exploitation of hollow tile for various structural purposes now being carried on both by individuals and by organized effort which furnishes an interesting study as well as a worth-while demonstration of salesmanship through publicity. Hollow tile, while it has been known and used more or less for a generation or more in this country, has not until late years been considered much as a general structural material. Because of this fact, of the lack of general knowledge of its possibilities and its adaptabilities for many uses, its development furnishes an interesting field for trying out the effectiveness of eduactional exploitation. It is being done, too, and done in a commendable manner, some of it by individual firms, and a goodly share by the Hollow Building Tile Association, with headquarters in the Conway Building, Chicago.

This organization has not only been responsible for some splendid magazine advertising of hollow tile lately, which has come at a time to produce effective results, but they have followed this effort up in a business-like manner by developing a series of illustrated books showing in an attractive manner the adaptability of hollow tile to many purposes which heretofore had not been thought of by the average man. The average man, even familiar with clay products, has been inclined to think of hollow tile as a special material for floor construction and partitions and backing walls in skyscrapers and other fireproof buildings and has not given enough thought to its possibilities in the everyday work of construction where the task is that of building homes and the multitude of more modest buildings essential to the welfare of the human race both in the cities and towns and on the farms.

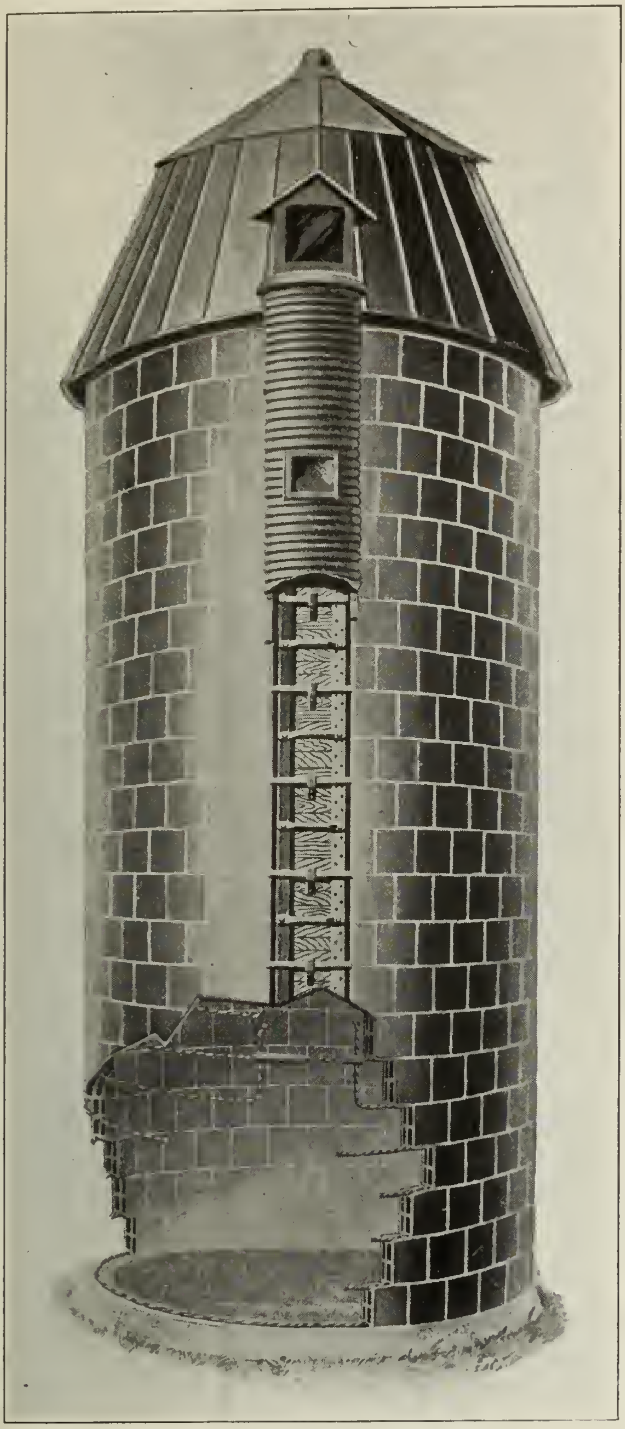
Now comes two books from the Hollow Building Tile Association, one devoted specifically to hollow tile for the home, and the other to hollow tile farm buildings. These are timely as follow-ups to the advertising which is being done, and they are instructing as to possibilities of tile, especially in modest home building and for farm uses. They include perhaps not as strong a feature as will be seen in the future, the use of tile for face work itself. This is one of the newest ideas of development which has not yet been fully developed, consequently many of the illustrations and suggestions in tile construction for home use show tile faced on the outside with cement or face brick. In a word, other finishings in the face than the tile itself. This will always be a feature in tile construction, but one making a study of the evolution of hollow tile is impressed with the thought that hollow tile itself as a feature in face work is to be a factor of some importance in the near future.

The feature of these new books is in the pictures and plan outlines of homes that have already been erected of tile. This is admittedly the best form of exploitation to encourage home building. There is nothing else makes an appeal equal to a picture and sketch outline of a home no matter whether it is a modest home than can be built without an architect or whether it is a more elaborate mansion. The picture and plan sketch assist the prospect in visualizing the completed building and is therefore the most effective form of exploitation.


Large Plant of American Co-Operative Exchange, Marion, Ind., Under Construction, to Consist of Large One Story Warehouse and Eight Bins Built of Hollow Tile.

There goes with this pictorial story, however, a text story of the evolution of hollow tile and also a department given over to the details of hollow tile construction which is not only interesting to the prospective builder, but is instructive for the practical builder and should prove of such value to the architect and contractor as to insure the book being preserved for reference and specifications.

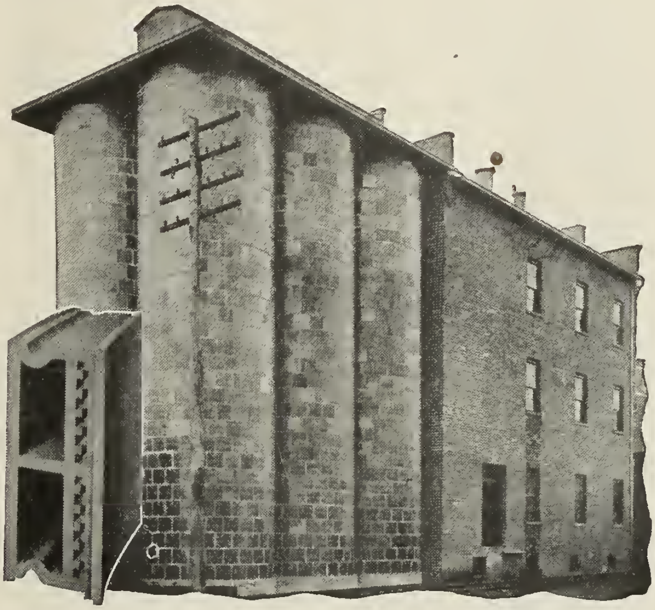
While the book on hollow tile for the home has the strongest appeal artistically, there is really a more striking impression of the possibilities of future development in hollow tile in the book devoted to its uses on the farm, because there is a wide field where the exploitation of hollow tile is but beginning and it is a field in which it has great future possibilities because of its permanent fire-proofing qualities. The field covered here includes the farm home as a feature of great promise, but that is only the beginning, not the stopping place of the use of hollow tile on the farm as pictured in this new book. It enters into everything from the mammoth barn and silo to the modest pig pen and poultry house, including dairy and milk houses, and it is these which should open up new vistas to the farmer who is building for keeps as well as new fields for trade development for hollow tile manufacturers. Of course there goes with it all a profusely pictorial suggestion of hollow tile for garage building which is timely and chimes in with an era of new ideas and new requirements for this purpose.



Preston-Lansing Vitrified Tile-Silo.

The farmer now not only has his automobile, but he has trucks and trailers and he has added the tractor and the machines and implements which go with it, so that he must develop a new scheme of housing for these things. They are too valuable to leave in an open shed or exposed to the weather and for the sake of protection they should be housed in fireproof structures. All this should and does spell big possibilities for clay products on the farm and the hollow tile people are going at it in a way to suggest that they are going to be on the ground and get their share of it.

In the exploitation of hollow tile for special purposes like silos, grain bins and storage warehouses, a good share of complimentary credit is due the J. M. Preston Co. of Lansing Mich., who are doing some splendid publicity exploitation individually. We have had some striking examples of individual promotion of hollow tile in the past by the National Fireproofing Co. and various other enterprising concerns, and among those entitled to a share of cheering applause is the J. M. Preston Co. in its present campaign of exploiting hollow tile for silos, grain storage bins, coal bins, lime bins and a number of special purposes for which they were not thought of a few years ago. This concern has been carrying some splendid advertisements in the milling journals, demonstrating graphically how permanent grain elevator bins can be built of their tile and reinforcing system invented and developed specifically for this purpose.



Time-Defying Hollow Tile Storage Bins.

They, too, have developed follow-up literature in the form of folders and catalogs which show progressive enterprise and an exhaustive study of the requirements in this work as well as the possibilities for trade development in special fields.

One of the splendid features about all this, too, is that the claims are plainly founded upon substantial facts. For example, the J. M. Preston Co. in a letter to the writer say, among other things, that their tile constructions for millers and others have pleased nearly every one of their customers. This is evidence that they are making good their claims and that hollow tile is making progress which will insure a place for it in the structural world of the future never dreamed of a few years ago.

The situation in the building material world of scarcity and high prices all around has created a state of public mind peculiarly susceptible to the appeal of new ideas and offerings, so this educational exploitation of hollow tile is not only fine and enterprising within itself, but it is timely and should therefore prove doubly effective and result in splendid returns for the money invested therein.

Written for The Clay-Worker.

CINCINNATI BRICK AND BUILDING NEWS.

THE VARIOUS building trades are to a great extent tied up with strikes, and this has been a very serious drawback, and the number of contracts let and the permits given out has been marked by a decrease. The situation here is really very serious. While some factory work has been let out and the outlook in this way is not very bad, or as unfavorable as it might be, still the number of such contracts is, of course, lessened on account of the difficulty to get help. Practically all of the large buildings that were started some time ago have been held up by the carpenters' vacation-strike, which lasted nearly two months. An agreement has just been reached, the carpenters accepting $1 per hour and going back to work.

Owing to this state of affairs, brick men are just a little unsettled and cannot really say what the future is likely to develop. There is considerable material here and the brick plants are in operation, not being affected by any labor troubles. The price of common brick is high, too, being quoted at $22 per thousand on barge and $26 per thousand delivered. The demand has been slack, and this is but natural in view of the very limited building that has been undertaken here in recent weeks.

Houses are very scarce here. In fact it is a serious matter now to house the people, and the obstacles that are in the way of building are so great as to discourage many from even considering the idea until there has been at least some possible change that will make the outlook more promising for the owners. The high prices are bad enough, but this, it is believed, would not deter more from building if there was an assurance that the work could be done within a reasonable time.

The Hamilton Brick Co. of Hamilton, Ohio, has recently sold to John H. Black, auditor of the Hooven, Owens & Rentschler Co., 340 acres of land in Fairfield township for about $100,000. The property is located beyond the northern limits of the city.

The final decree in the suit of the Portsmouth Refractories Co. against the Harbison-Walker Refractories Co. has been entered by United States District Judge John W. Peck, enjoining the defendant from operating clay mines over the coal mines of the plaintiff company within certain territory in Scioto county, so long as the defendant company is operating its mines. Mark A. Crawford of Portsmouth, Ohio, has been appointed special master to ascertain in gross the reasonable cost of constructing and maintaining sufficient drains to carry away the water from the plaintiff's mines. The plaintiff has been awarded $120 and costs. The defendant took exceptions to the decree and gave notice that it will appeal the case to the United States Circuit Court of Appeals.

The Purcell Brick Co. of this city has recently opened a branch office at 601 U. B. building, Dayton, Ohio, in charge of E. E. Acomb, formerly of the Acomb-Keller Building Co. There will be a modern brick display maintained, and every facility offered for the trade to obtain service. The local office notes that conditions are not very flattering now on account of the labor troubles, and the situation does not look as bright as it could. The company has been awarded the contract for brick to be furnished for the Henry Clay apartment building, to be built at Lexington, Ky.

The E. F. Grand Brick Co. has nothing of very great interest to note at this time, the demand for brick and other clay products being light on account of the laxity in building operations here now. There is really very little doing these days.

The report at the office of the Cincinnati Clay Products and Manufacturing Co. is that the demand for both face and building brick has been slow, the situation now offering nothing of a very favorable nature, with the strikes tying up so much work. Both the common brick plants of this company are now in operation and there are some brick being sent on barges down the river, but the demands have been light.

There is little that is new with the Evans Builders Co. these times, the demand being only fair in view of the unsettled conditions that have been obtaining lately.

The Builders Brick Co. is moving along in a fair way, but the situation is not of the flattering kind. There is really nothing of more than an ordinary nature now.

Reports with the Moores-Coney Co. are that there is little to give life to the trade these days of labor troubles and other disquieting conditions in the building field.

The Queen City Shale Brick Co. has about completed the building of its new kilns and is, of course, in a better position to fill orders now, though the demands for brick are not at all brisk these days. However, this company has been enjoying a very fair demand considering the unsettled conditions in the building line.

Little of interest has been noted with the D. E. Shorey Brick Co., where the situation is not any different from the other local brick concerns these days.

The sale of the property on Vine street, between Fourth and Fifth streets, has been completed to the Fountain Theaters Corporation and a new building is to be erected in the not-distant future, in which will be housed a large motion picture theater, stores and offices. Plans for the new building are almost completed, but work will not be started for some time.

The Brighton Bank and Trust Co. will spend about $150,000 in building an addition to its present location. It will be one story.

The golden anniversary dinner of the Cincinnati Chapter of the American Institute of Architects which was held here recently at the Hotel Gibson was enjoyed by a number of the local architects. The board of directors was represented by Richard Schmidt of Chicago.

The Y. M. C. A. of Middletown, Ohio, will spend $400,000 for the construction of a building in that city at the southwest corner of Second and Broad streets. There will be a meeting of the committee to consider the plans and specifications.

A ten-story fireproof addition will be built to the Power building, at the northwest corner of Eighth and Sycamore streets. Harry Hake is the architect. It will be 40 by 60 feet and will add 24,000 additional square feet to the present building.

Tentative plans have been made for the building of a new church for the members of Second Church of Christ, Scientist, which have been submitted for consideration to the building commissioner. James M. Robinson of Atlanta, Ga., is the architect. The building will be of classic design, of stone and brick. It is to be built at Clifton avenue and Probasco street, and will have a seating capacity of 850. CINCY.

COLLOIDAL CLAY SOAP.

Illustrative of the practical value and the worth-whileness of continued research work in the clay industries there comes to hand a report from Alfred Nutting, clerk in the American Consulate in London, which tells of a probable revolution in soap making through the introduction of a colloidal clay as an addition to or as an alternative for some of the customary constituents of soap. The colloidal clay is prepared from china clay and one of the uses found for it is not as a filling material or an adulterant for soap, but as an actual substitute for soap material. The experimental development described by E. E. Weston in the Chemical Age, of London, and it seems that to quite an extent it will take the place of fatty acids in soap, probably reducing the quantity required by half. The process, he says, is patented and it is predicted that there will be found many and wide uses for clays both in England and in other countries treated by the process.

NATIONAL SANITARY POTTERS MEET IN EVANSVILLE.

EXECUTIVE sessions took up the greater part of the first day in the monthly session of the National Sanitary Potters' Association that was held at a hotel at Evansville, Ind., Friday and Saturday, May 7th and 8th. Most of the business of the session was transacted on the first day of the meeting. Men were in attendance at the meeting from the eastern part of the country. The association as a whole produces practically all the sanitary pottery ware used in the United States. The two days' meeting opened with a business session which was called to order by Archie H. Maddock, president of the association. George C. Dyer, secretary and commissioner, also attended. Both officers live at Trenton, N. J. Following an informal luncheon at noon, another business session was held in the afternoon. Discussion at these meetings dealt with matters pertaining solely to the pottery industry and problems which now are confronting the association. The last part of the first day of the meeting was spent in examining the Trade Extension bureau in the Mercantile Bank Building, which is headed by William J. Woolley of Evansville, the same having been established about a year ago. The visitors were much interested in the work that is being done by this bureau. A banquet was enjoyed in the evening and following the banquet there was a theater party. On Friday, May 8th, the visitors made a tour of inspection of the plants of the National-Helfrich Potteries Co., the Peerless Selling Co., and the Peerless Seat and Tank Works, which are among the big manufacturing concerns of Evansville. An automobile ride was enjoyed in the afternoon around the city and to points near the city. In the evening a fried chicken dinner was enjoyed at the hall of the Central Turners. The association was entertained while in Evansville by Michael D. Helfrich, president, and H. F. Weaver, secretary and general manager of the National Helfrich Company, who are members of the association. This is the first time that the association has ever held a meeting west of Pittsburgh. The visitors were well pleased with their trip to Evansville and their splendid entertainment and they expressed the wish that the meeting would go to Evansville again some time in the future. The association men attending the meeting were as follows:

A. M. Maddock, J. A. Dorety, Jr., G. G. Dyer, B. O. Tilden, Andrew Cochran, Sr., Thomas Deets, George E. Hoffman, H. W. Wolf, J. R. Smith, John A. Campbell, E. S. Aitkin, and W. G. Titus of Trenton, N. J.; T. M. Dobbins, Camden, N J.; J. F. Coxon and F. W. Bell, Fredericksburg, Ohio; J. E. Slater, Abingdon, Ill.; F. J. Clifford, Chicago; R. E. Crane, Wilmette, Ill.; E. V. Brigham, Kalamazoo, Mich.; John Rhodes and S. B. Kling, Kokomo, Ind.; P. J. Faherty, Lambertville, N. J.; Fred Buford, Keyser, W. Va.; Arthur Plantier, Columbus, O.; G. C. Kalbfleisch, Tiffin, O.; A. S. Healey, Elizabeth, N. J.; H. S. Kirk, Newcastle, Pa.; J. E. Wright, Wheeling, W. Va.; John Lindrop, Philadelphia, Pa.

Written for THE CLAY-WORKER.

NEW YORK AND VICINITY.

COMMON BRICK in New York have been selling at $30 for the past month or so. They are now $30.45. In the first hauling zone the price is quoted at $34.45. Other prices are named for different distances, but these two are indicative of all quotations. Barges can come down the river now, but manufacturers are not sending them faster than the brick are ordered, for the reason that it is expensive holding barges at piers in New York, while they can hold them at their own piers in the Hudson river district at no extra cost. As the brick are wanted they are sent down the river and they will arrive in sufficient quantities to satisfy requirements.

Partition tile has advanced. For 2x12x12 the price asked is $115.80 per 1,000 square feet delivered. For 3x12x12-inch the price is $185, and for 4x12x12-inch the price is $208. For 5x12x12-inch they are asking $278 delivered. The supply is none too large, but manufacturers promise ample quantities when shipping conditions return to normal.

New York City is to build extensively this year. The proposition now is to spend $100,000,000 in new construction and the aldermen are endeavoring to pass an appropriation of $10,000,000 for the beginning of the work. Whether the city, as a city, will take it up, or whether in some way it will assist, is not entirely clear as yet. Both methods have been under discussion and an early decision is likely. If it doesn't come soon it will be too late to do much this year. New York is now reported at least 25 per cent. underbuilt, so far as houses go. Only about 400 apartments in the entire city are vacant. This is the smallest number ever known. Rent profiteering is getting a severe setback these days.

Along the Hudson river makers are getting ready to begin work. Some have begun work. Barges are ready to come down the river whenever the brick are wanted, but because of labor tie-ups and various other hindrances to delivery, including the heavy charges when barges stand unloaded, shipping is managed with more care than formerly. The principal difficulty now is labor. And though manufacturers are ready to begin, they find that their operations are more or less hampered by lack of necessary help. Nor do they quite see from whence their help is coming. A considerable quantity of brick is on hand for delivery until the yards are in operation. But they are confronted with exactly the same trouble they experienced in 1919. They can't get labor.

The brickmaker is discovering that he has a new competitor in securing unskilled labor. The road department of New York State is bidding against him, and thus far the brick man has lost. The State can and does pay more than the brick man can afford to pay, and as usual workers would rather be employed by the public than a private company. Whether they do or not, they think they have an easier time; or perhaps they think they can loaf on the job more than they can where a man must make money out of his varied operations. At any rate, brickmakers all over the State are suffering this spring from the competition of the road department. Much road construction is under consideration and unquestionably the drain of workers in that direction will have its effect all the season. At least the trouble during the opening of the season, when the workers are wanted the worst, will be sufficient to prevent an early start with a full force of hands.

The Binghamton Brick Co., Binghamton, is considering an increase in capital from $50,000 to $150,000, which will be expended in expansions and improvements.

While the railroad strike is over, freight has not yet begun moving in either normal volume or as expeditiously as usual. But improvement is noted and brick and tile shipments are not as badly delayed as they have been since the snow blockade early in February. Buyers are not getting their product through as rapidly as they might wish, but they are thankful to get something done and hope for steady improvement. The situation in building in and about New York is complicated by the shipping situation. Few are free from the troubles that have come about through the failure of railroads to function.

The building situation in New York is by no means satisfactory. The hesitation displayed and the labor difficulties which arise one after another are responsible for much delay. The season of preparation is fast passing, and so far as can be seen no real progress is promised in restoring a normal condition in housing. Capital is hard to get, and when capital is obtained the situation is immediately complicated by strikes or some other dispute. The plans are on a stupendous scale, but the outlook for speedy development is poor. Perhaps the warring interests will wake up in time, but it is doubtful now, and it looks as though the whole of 1920 will be frittered away with nothing really worth while done. BURTON.

NEW JERSEY CLAYWORKERS MEET JUNE 25.

The mid-year meeting of the Clayworkers Association of New Jersey and the Eastern Section of the American Ceramic Society will be held at Trenton on Friday, June 25, with morning and afternoon sessions.

As usual the feature of the meeting will be a number of practical papers upon subjects vital to those engaged in the ceramic industry. The committee heretofore has successfully blended the practical and technical, and has made them entertaining as well as instructive. The program this year will abate nothing from the standards hitherto set.

The convention of the American Society for Testing Materials will meet at Asbury Park the day previous.

MASSILLON TO HAVE NEW POTTERY.

Promoted by pottery men from Canton, Massillon, Salem and East Liverpool, Ohio, a new company to be known as the Massillon China Company, is to be incorporated for $300,000, and will begin erection within the next few weeks of a modern plant adequate for employing 300 workers. Application for a charter has been made at Columbus. The Massillon Chamber of Commerce is now considering the site. Present plans call for a thirteen-kiln plant. The main building will be 500 by 200 feet and one story in height. The construction will be of concrete, steel and brick. Eight acres will be necessary to accommodate the factory, and when finished it will have a capacity of doing $1,000,000 worth of business a year. Men behind the project say it will be in operation within five months. The company will manufacture semi-vitrous china and a general line of tableware.

THE CEMENT PRODUCTION.

Preliminary reports on the production of cement for 1919 by the U. S. Geological Survey indicates an increase of both production and shipment, and a consequent reduction in the stock on hand. At the beginning of the new year there was less than 5 million barrels of cement on hand, which starts the year off with favorable prospects for the cement industry.

The shipments of Portland cement in 1919 amounted to 85,485,000 barrels valued at $144,461,000. The production was 80,287,000 barrels, and the stock on hand at the mills at the end of 1919 amounted to 4,976,000 barrels.

Only one new plant was added to the industry during the year, that of the Indiana Portland Cement Co., at Greencastle, Ind. The total number of plants producing in 1919 was 110, and there were three more than this did shipping. The average factory price per barrel of Portland cement ranged from $1.57 in Kansas to $2.03 in Utah, the average for the whole country being $1.69, an increase of 6 per cent. over 1918.

GROWTH OF POTTERY INDUSTRY IN JAPAN.

There is an interesting and somewhat lengthy commerce report by Commercial Attache Jas. F. Abbot, of Tokyo, Japan, on the commercial pottery of that country in which it is shown that the pottery industry of Japan has made wonderful progress since the beginning of the great war. This is evidence that the Japanese have been very busy capturing trade which formerly was served by Germany and other parts of Europe, and though a large percentage of this trade has been export business and there has been an increase of exports to the United States, the quantity shipped to this country has not grown in proportion to the general increase in production and in shipments to other countries.

The following tabulation will give an idea of the growth of the pottery industry in Japan during the past five or six years, the annual value of pottery production in Japan being as follows:

Pottery Production in Japan.

1914	$ 7,828,428
1915	8,766,124
1916	12,610,174
1917	14,669,216
1918	22,107,042

The report indicates a class division of this pottery somewhat as follows:

Ornaments and Art Objects	18 per cent.
Dishes	56 per cent.
Industrial Goods	10 per cent.
Toys	5 per cent.
Miscellaneous	11 per cent.

While the increase in exports of Japan was hardly in keeping with the increased production there has been a very active increase in the export trade during the past five years and while the shipments to this country have participated in this the increased export to the United States has not been in proportion to the increase to other countries, evidently to South American countries, where Japanese products will probably enter into competition with our own products.

The exports of Japan for the period of 1914 to 1918 inclusive were given as follows:

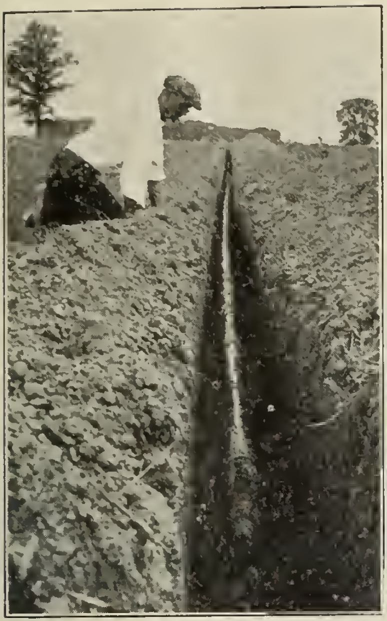
Japanese Export Pottery.

	Total Exports	Exports to U. S.
1914	$2,955,884	$1,572,374
1915	3,476,476	1,455,072
1916	6,051,996	1,095,694
1917	7,238,967	2,470,395
1918	9,976,896	2,229,467

As shown by these figures, before the war the United States took nearly half of Japan's exports, but in 1918 this had shrunk to less than one-fourth, though the quantity is nearly a million above earlier exports to this country. It is said that about two-thirds of our total imports of decorated china, Parian, porcelain and bisque, came from Japan. England, however, supplies the preponderous of the decorated earthenware and crockery imports.

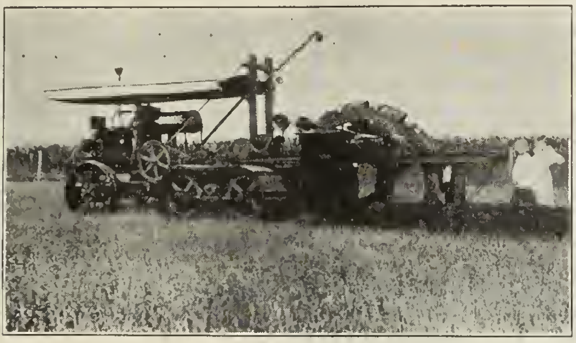
Of the Japanese pottery, which enters largely into exports, we find tableware, including all the pieces in an ordinary dinner set, sanitary ware, electrical porcelain, toys and novelties.

Now they are saying that the difference between a mistake and a blunder is that a blunder is to make the same mistake more than once.



TILE DITCHING

How The Drain Tile Manufacturer Can Increase His Profits, Satisfy His Customers and Dispose of All His Product,



THIS country needs greater production. Especially is this true in regard to necessities of life. Greater production will decrease in its proportion the high cost of living and the reduction of the H. C. L., will mean better and happier days for all of us. The sooner we get this one big idea thoroughly lodged in the minds of the American people and all of us put our shoulders to the wheel to make a campaign along this line effective, the sooner we will do away with the unrest so prevalent in this country today.

How can we as drain tile manufacturers help in forwarding this movement? The answer is a simple one, greater production of drain tile and a greater and more extended use of same for that means a greater crop yield and a lower price for commodities. There are quite a number of problems to face in this particular, the chief one of which is labor. If we have sufficient labor on our plants to assure adequate production although the demand is good, we still have to face the shortage of labor on the farm and hence the difficulty of getting the tile system in as quickly as possible.

Ditching contractors have their hands full and they are making big profits, but serving the farmers well in their capacity. However, the number of ditching contractors is small in comparison with requirements. Several drain tile manufacturers are solving this problem by buying ditching machines and making this line of work a most important part of their business. And there is more profit in it than in the manufacture and selling of drain tile. The following information will bring out the important points in this connection, and we hope the facts stated will prove so conclusive that many manufacturers of drain tile will follow along the lines of J. W. Arbuckle.

Mr. Arbuckle is a drain tile manufacturer owning two good plants, one at Homer, Ind., the second at Milroy, Ind. Formerly he had trouble disposing of all his tile, due not to a lack of knowledge or interest in this particular on the part of the farmers in his territory, but to the fact that labor was scarce and the farmers were so busy that time could not be given to this big dividend-paying proposition.

Mr. Arbuckle wisely decided that he would solve this problem himself, so he purchased a Buckeye traction ditcher, secured a competent man and started in to ditch a field close to one of his plants. The ditching machine was no sooner on the job than farmers near by were putting in their requests for similar work on their farms.

The demand was such that it was not long before Mr. Arbuckle bought a second machine, and is now contemplating the purchase of a third machine. He secured for a partner in this connection a former drain tile manufacturer, and now the firm of Arbuckle & Gates is using up all the tile that can possibly be made in his two plants; in fact, they have to buy tile from other concerns to meet their requirements. The beauty of it all is that even with the present high prices for drain tile, Mr. Arbuckle is making a better profit out of his ditching work than he is from his drain tile business. Then, too, the drainage systems are put in right, the farmers are better satisfied and a big step forward has been made for bigger production of crops in that vicinity. Mr. Arbuckle is not only making big profits, but he is rendering a patriotic service to his community.

As a rule ditching machine owners receive 3 cents an inch for every inch in depth of ditch per rod. The average depth being 30 inches, the cost on the average is 90 cents per rod. With favorable weather conditions better than 100 rods will be ditched daily, including the entire work of ditching, tiling and filling, bringing a total of $90 per day.

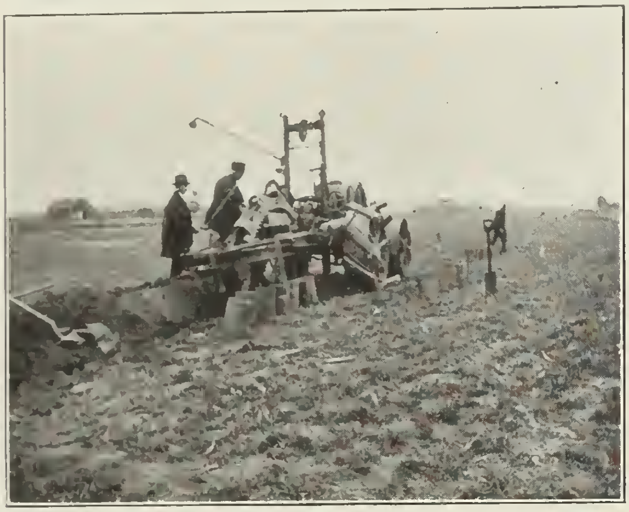
The average daily operating cost of a small Buckeye ditching machine, figuring $5 per day for operator, $3.50 for helper, $3.75 for gasoline, $1.25 for oils and grease, 85 cents for maintenance and repairs and allowing $2 per day for depreciation of machine and $1.20 for interest, totals $17.55, making a net profit of $72.45 daily. Then added to this is the profit on the drain tile and the absolute assurance that every foot of tile produced is to be disposed of without any expense in the selling end or discounts to dealers.

The advantages of this outside the profits secured are many. For instance, the farmers are given absolute assurance that the system will be put in correctly, thus giving tile underdrainage a protection from the failures due to incorrect installation. One good drainage system in a county showing 33 1/3 per cent. dividends year in and year out on the investment, as should be the general case, is an optical demonstration and conclusive proof to the doubting Thomases, hence is a mighty good advertisement.

Again, you have the advantage of marketing your wares promptly and sometimes during periods that otherwise would be void of sales.

But one of the greatest benefits due to the elimination of the middleman will be the absolute absence of cut prices. Isn't this a splendid opportunity for any drain tile manufacturer?

We paid Mr. Arbuckle a visit recently down in Rush county, Indiana, where he was ditching a corner of his father's farm. The ditched portion consisted of 17 acres of sugar-tree land that had been an eyesore on the farm due to the fact that every spring this land was the catch-basin of the overflow from many of the surrounding fields and was left in a condition of little value for farming. Tile underdrainage was the only remedy for such a condition, and now that it is thoroughly tiled, splendid crops will take the place of the meager yields and rank weeds formerly grown there. An illustration of this underdrainage system is shown herewith. Five, six, seven and eight-inch tile were used for laterals, feeding into a sixteen-inch main and also an eighteen-inch county ditch. The large sizes of tile in main drains were required because of the unusual amount of overflow experienced here. Ordinarily an eight-inch outlet would be sufficient for handling the water from the land, providing the surrounding fields were tiled.



Ditching Arbuckle Farm With Buckeye Ditcher.

Mr. Arbuckle ditched 520 rods on this farm, finishing the work in five days. A small Buckeye ditcher was employed. He operates a larger ditcher for work requiring greater than ten-inch tile. Work by the big machine is based on 5 cents per inch per depth of trench.

In regard to cost of operating a ditching machine the following information furnished by the Buckeye Traction Ditcher Co., Findlay, Ohio, will no doubt prove interesting:

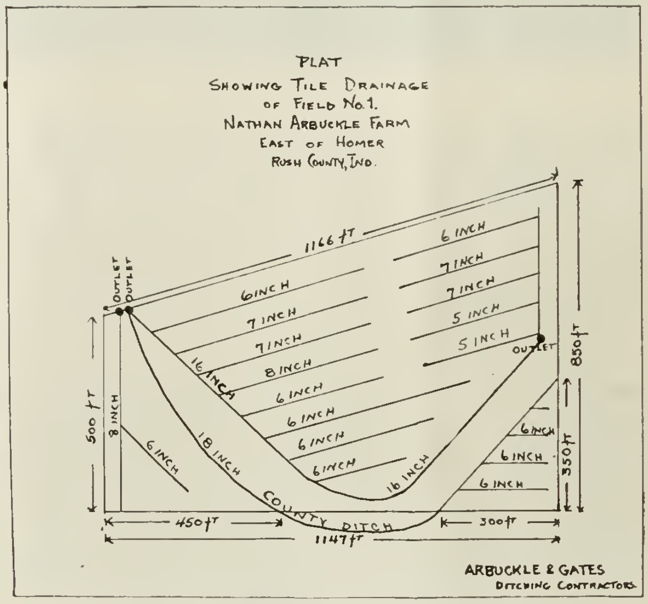
The Cost of Operating a Ditcher.

This subject, in its broadest sense, might easily deal with the cost of ditch or trench excavation, since the two are so closely related, but it will be confined strictly to average operating costs of gasoline power traction ditchers. Gasoline ditchers are specified because most power machines are equipped with gasoline, although kerosene is much used, especially with single-cylinder engines. The data is based on many years' actual experience of owners and operators. These costs are practically all determined by five factors: (1) Prevailing soil conditions; (2) size of ditcher; (3) operator; (4) efficiency in management, and (5) general practice of different localities. It will be well to elaborate briefly on these determining factors.

1. Prevailing Soil Conditions.—The ditcher most generally used, hundreds of them being in operation, cuts 11½ inches wide and any depth to 4½ feet. In favorable soils it has an actual proven capacity of 240 rods (3,960 lineal feet) of ditch to a depth of 30 inches in a ten-hour day, yet under soil conditions particularly adverse to machine work 30 rods (495 lineal feet) a day would be excellent progress with the same ditch dimensions. This 11½-inch by 4½-foot ditcher averages 90 to 100 rods of 30-inch trench in most Indiana and Ohio soils, while in the heavy gumboes, such as are encountered in northern Iowa, 60 to 75 rods is considered a good day's run. Cavey and shifty soils, by slowing up work, materially increase operating costs per rod or per lineal foot.

2. Size of Ditch.—The larger the machine the greater will be the depreciation, interest on investment, cost of maintenance and repairs, and wages for skilled operator and assistant. These increased expenses are, however, offset entirely by the better prices obtained for big work.

3. Operator.—It goes without saying, almost, that he should be thoroughly competent and conscientious. While traction ditchers are ruggedly constructed and capable of withstanding strenuous service, they are not automatic in action. The operator must furnish the brains and good judgment to obtain the desired results. An incapable operator can, in five minutes, ruin the best machine made, while an efficient operator can do good work with a machine in comparatively poor condition. The success or failure of a traction ditcher is practically dependent entirely upon the operator.



Drainage System on Arbuckle Farm.

4. Efficiency in Management.—The biggest money in ditching with machinery is made, or saved, by planning the work well and then working the plan well. Tile drainage systems should be laid out carefully and completely in advance of starting the ditcher to work. Nothing should be left to chance or guess work. Failure to have tile on hand and in position and neglect in providing necessary supplies, such as fuels, oils and spare machine parts, increases operating costs greatly. Keep the cutting or digging wheel busy—that decreases expenses and increases profits.

5. General Practice of Different Localities.—On big work the contractor machine owner has his own camp, where he boards and lodges his men. He buys, besides his lubricating

oils and greases and repairs, the fuel for his engine. Not only does he excavate the ditches, but he also lays the tile, blinds it and back-fills. In other words, he does the job complete. On smaller contract work in some localities the land-owner often boards and lodges the operator and helper, furnishes engine fuel, lays and blinds the tile and back-fills the ditches. In other localities the land-owner furnishes or does only a part, or neither furnishes nor does any of these things. It will, therefore, be readily apparent that as regards smaller contract machine costs they depend largely on the prevailing custom or general practice of a community.

Despite these various limitations, it is possible to form some general conclusions as to the cost of operating power traction ditchers for tile drainage. The average life of these machines is ten years, making the yearly depreciation rate 10 per cent. Maintenance or upkeep approximates 4 per cent. Gasoline as fuel figures .9 gallon per horsepower of engine per ten-hour day; average cost per gallon, 30c. Oils and greases, $1.25. Interest on investment, 6 per cent. Operator, $5 to $8, and helper, $3.50 to $5 per day, depending on the size of the ditcher. It is unquestionably safe to figure the working year as 150 days. On the basis of these calculations the daily operating cost for a new 11½-inch by 4½-foot gasoline ditcher, equipped with apron or caterpillar wheels, worth $3,000, runs as follows:

Well Burned Clay Tile Increase Crop Yield 33 1/3 Per Cent.

Operator	$ 5.00
Helper	3.50
Gasoline	3.75
Oils and greases	1.25
Maintenance and repairs	.85
Depreciation	2.00
Interest	1.20
Total	$17.55

Naturally, the average daily operating cost for larger ditchers will be proportionately greater.

The following testimonials show what can be done with the ditching machine in Illinois, Indiana and Ohio:

Ditches 257 Rods in One Day.

Piper City, Ill.

The Buckeye Traction Ditcher Co., Findlay, Ohio:

Gentlemen—You asked for a testimonial as to what we think of the Buckeye machine. Our first machine was delivered on the 10th day of August, 1917, and was operated from that time until the 1st day of December without a single breakdown. Our best day's run was 257 rods, which we cut in 9 hours and 10 minutes, on the George Paser farm at Buckley, Illinois.

We were so well pleased with our first machine that we bought another, which was delivered to us March 15, 1918, and we are now operating two new Buckeye machines.

Yours very truly,
HERR BROTHERS.

Since the above was written Herr Brothers have purchased three additional machines, making them five in all.

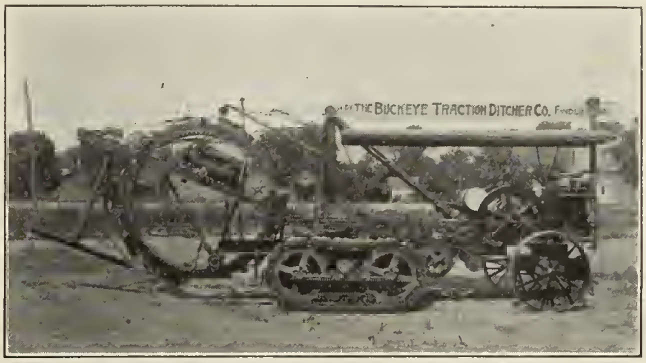
Has Passed 41-Mile Mark in Ditching.

Logansport, Ind.

The Buckeye Traction Ditcher Co., Findlay, Ohio:

Gentlemen—I cut 117 rods of ditch, averaging 42 inches deep, made 4 connections and 2 curves in one actual day's work, for which I received $71. I passed the 41-mile mark of ditching with my machine on this job and the machine is in A1 condition. This in a little over three years, and I have not run the machine one-half the time. The work averages about $150 per mile.

Yours very truly,
H. W. SHERRARD.



Small Buckeye Traction Ditcher.

This Machine Averages Better Than 150 Rods Per Day.

17,807 Feet of 4-Inch Tile in 3½ Days.

Baltic, Ohio, March 8, 1920.

Gentlemen—We dug and laid 17,807 feet of 4-inch tile in 3½ days on an average of 2 feet deep, days averaging from 12 to 14 hours. There were three of us, every one experienced, and we made every move count. We recevied 40 cents per rod and had kerosene furnished; 1,079 rods at 40 cents made us $431.60, with, you might say, no expense.

We have two No. 1 machines and had thought of getting the third machine, but owing to scarcity of tile and poor railroad service have postponed buying third machine for time being.

Yours truly,
GETZ BROTHERS.

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we again inaugurate a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

QUESTION: What kind of clays will produce certain colors and why?

Answer: Clays without any iron produce under oxidizing firing conditions white brick or cream colored brick under reducing firing conditions.

Sometimes clays blood red or dark blue or even black burn to a white color, because the color of the clay is caused by organic matter, which burns out at a dull red heat.

Clay that contains from three to four per cent. of iron burns to a buff color and also clay with less iron burns buff, if the heat is carried high enough.

Clay that contains from four to seven per cent. of iron burns to a red, to a dark or cherry red color if the heat is sufficient to burn a dark red.

Such clays also burn to a black color according to the intensity of the heat with reducing firing.

The color of raw clay has not a particle to do with the final color of the brick in the kiln.

As stated the color of the raw clay is caused by organic matter and the color of the burned brick depends on the iron contents and the intensity of the heat and the firing conditions, which may be oxidizing or reducing.

For instance: A red burning clay when burned under reducing firing conditions burns dark blue or black, if these conditions are kept up long enough.

Why? Because the oxide of iron that burns the brick red and which is in the ferric state, changes under reducing firing conditions to the ferrous state, which is dark blue or black.

A clay that burns cream will burn buff with a higher heat and reducing firing conditions.

White burning clays will burn to a blueish or yellowish tint, if fired for any length of time under reducing kiln atmosphere, therefore whiteware burners are very careful, that a kiln does not smoke heavy after firing up. If it does, they punch a hole for air over the fires and the air will burn up the smoke and create oxidizing conditions, and the ware burns clear white.

QUESTION: How are fire flashed or mottled brick produced?

Answer: Shale brick to be flashed must be set flat in the kiln so the faces are exposed to the action of the reducing flames and so that the faces become fireflashed as is the case in burning sewer pipe to get them ready for the saltglaze.

Brick that burn buff, but do not contain enough iron in the form of pyrites to produce specks, must be made with an addition of from 1½ to 3 per cent. granulated maganese of such a mesh as to produce the desired size of the specks. White burning brick are also treated in the same manner.

QUESTION: Can you tell me something about Diatomaceous Earth and its use in the ceramic industries?

Answer: Diatomaceous or silicious earths are formed from the remains of diatoms, a most interesting group of unicellular plants. These are widely distributed growing today in the bottoms of ponds, lakes, in damp places and in the bottom of the sea.

Diatoms exhibit most beautiful forms and shapes, they can only be seen individually under the microscope, it is then that we can see how these vast deposits have come about, the cells are enclosed in two valves one of which is smaller than the other and is covered by the larger, like a box lid.

These valves are inflated with silica, are transparent like glass, they have fine lines and designs of marvelous beauty, sculptured upon their surfaces. As diatoms multiply with the greatest rapidity, the continual casting off of these valves through reproduction or death, millions upon millions of them go to make up the enormous deposits of the silicious earths, often found where lakes have dried up or where the sea once has been.

Fossil deposits of these plants are found in many places remote from one another, notably in Virginia, Nevada and in California.

This diatomaceous earth is the foundation of many commercial polishing and scouring powders, as "Keen Kleener," "Old Dutch Cleaner" and a host of others.

These deposits have also been used as absorbents in the manufacture of some explosives.

It is not of very great intrinsic value and is used very largely for insulating purposes. The Celite Company of New York uses large quantities of it.

BUILDING IN 1919.

The U. S. Geological Survey, in a brief bulletin on building operations in 1918, has figures covering between 100 and 150 of the larger cities of the country. These figures indicate that the average price per building in 1919 was $3,653, and that the total building operations in the group of cities usually reporting will run $1,377,181,000. This is the highest cost ever recorded and indicates that the year as a whole was fairly good in building operations in the cities. Incidentally we know that building in the rural districts was fairly active, too; in fact in some states the feature of the year was in the rural building. From this there can be no question but that 1919 was a banner year in building operations, and still the fact remains that the country as a whole has a greater housing shortage today than at any time in the present generation. This means that there is plenty more of building ahead of us yet, and if we can settle down to it right we will be busy along this line for the next five years.

THE CANTON CERAMIC ENGINEERS CO.

Believing there is a demand for expert service touching on the practical details of brick manufacture from the winning and preparation of clay to the final process of burning, a new firm of consulting engineers under the above title has been established with headquarters at Canton, Ohio. Being an important clay center the new firm is well located. It is composed of B. J. Gallagher, who has had many years' experience in the management of brick plants, and Ernest W. Knapp, who is a graduate of the New York State College of Ceramics, and who has also had many years' experience as superintendent and manager of clay plants. They offer to the trade "Corrective Service" by which they mean advice and counsel as to all the processes of manufacturing brick and tile, covering each phase of the business from clay pit to the finest product. Correspondence is solicited from brick and tile manufacturers who have troubles and desire to find a remedy for same.

AMERICAN SOCIETY FOR TESTING MATERIALS.

Annual Convention to be Held at Asbury Park, N. J., June 22-25.

THE TWENTY-THIRD annual convention of the American Society for Testing Materials, will be held at Asbury Park, N. J., June 22 to 25th. The Monterey hotel will be headquarters. A large attendance is anticipated and those who intend to be present will do well to make reservations if they have not already done so. The committees having in charge the specifications for building brick, drain tile, paving brick, sewer pipe and other clay products will be represented by officials delegated for that puropse. Members of the N. B. M. A., and all affiliated associations are requested to attend and take an active part in the discussions of the subjects in which they are particularly interested. It is an occasion when business and pleasure may be combined in a helpful manner. Previously the conventions have been held at Atlantic City. It is hoped that Asbury Park will prove equally attractive.

ANNUAL MEETING OF THE CHAMBER OF COMMERCE OF THE UNITED STATES.

INCREASED production was the slogan at the Eighth Annual meeting of the Chamber of Commerce of the U. S., held at Atlantic City, April 26 to 29th. The captains of industry from all sections of the country were in attendance and many men conspicuous in the nation's industries were present and took an active part in the deliberations, all of which will be duly chronicled in the "Nation's Business" the official organ of the chamber.

One session was devoted chiefly to the labor situation. Both employe and employer were ably represented, and it was the consensus of opinion that by working concertedly in good faith and harmoniously, capital and labor can readily solve many of the vexing problems which now disturb the various lines of industry throughout the country.

The Kansas Industrial Court.

Governor Allen of the Sunflower State, told in his own inimitable way of the successful working of the Industrial Court in Kansas by means of which strikes are prevented to the great good of both labor and capital. The court has earned a place of high esteem in the minds of all students of labor troubles, who are seeking for a rational solution, without regard to private interests and individual advantages. Governor Allen states that in the past labor has been exploited by labor leaders, to the woeful loss and injury of labor and even greater loss and suffering to the general public. That a strike is a losing venture for labor, even though it gains a temporary advantage is proven graphically by the record of strikes in the Kansas field. Between April, 1916, and December, 1918, there were 364 separate strikes in coal mining districts of that state. As a result the miners gained in wages $784.84, while they lost in wages through idleness during the strikes $1,600,454.41. Of course there was even greater loss imposed upon the public, who were entirely innocent of any blame in the matter. That is nearly always the case, the consumer who always pays the bills, is the great sufferer in all serious labor disputes.

It was with a view of ending this deplorable condition that led to the framing of the Court of Industrial Relations and it is already proven of great advantage to the people of Kansas, the laborers no less than employers. It takes the strike out of the domain of personal strife into the realm of judicial procedure, where all offenses against public welfare should be determined. It does not restrict personal rights, but protects them and at the same time insures justice to the general public.

The Kansas law is the most legislative act that has been put in operation in recent years. It is to be hoped that a similar law will be enacted in every state in the union, for the proper protection of labor and the innocent public, which in the past has been the great sufferer from strike troubles.

INTER-RACIAL COUNCIL MEETS.

A CONFERENCE of the Inter-Racial Council took place in New York early in the month. While many of the addresses and much of the discussion centered about subjects not directly applicable to clay working, it all contained something of interest.

Labor shortage was one phase of the discussion, and brick makers have suffered from this too long not to know what it means. But like most such discussions it failed to provide a concrete remedy for an admittedly critical condition. It is helpful sometimes to hear these vital subjects handled by men of ability, but the real test, telling how to relieve the shortage, is left to the men who operate the plants, as has always been the case heretofore. To get such speakers and thinkers to recognize that a shortage exists is worth much, but learning how to relieve the shortage is a different matter, and no professor has ever offered a practical solution.

Immigration was another subject and the situation was reviewed. But perhaps few realized that brick plants are suffering not alone from immigration, but from emigration, as well, and emigration is so much larger than immigration now that immigration has ceased to help the brick maker.

Another thing was the handling of foreign born workers. One might have acquired the impression that they should be handled with velvet gloves. May be so, but handling men man fashion is more satisfactory. If men had handled men man fashion during the past few years the country would not be seething with strikers, with all its industries and the very foundation of its government threatened.

Such thoughts arise when one listens to doctrinaires, or men with some pet theories to expand, or experiment with. A return to straightforward, vigorous action would solve more labor and business problems in a week, than a score of such discussions would settle in a year.

Such councils are beneficial, but they are not sufficiently practical. They now yield a minimum of benefit for a maximum of effort, when it should be reversed. It is easy to criticise. It is hard to formulate a program. The man who does so will be a leader in his generation. BURTON.

IMPROVED KILN FLOOR SAVES FUEL.

Thomas M. Wilson, president of the Brick & Clay Engineering Company of Greensburg, Pa., writes that they are reconstructing a number of brick plants putting in their new improved kiln floor. These kiln floors, Mr. Wilson states, not only improves the product, but changes the method of burning making possible considerable saving in fuel. They are also building a number of their improved dryers. Mr. Wilson says all the brick men with whom he comes in contact are very busy.

The great problem of the day all around is how to double the capacity of the men at work. The simplest and most satisfactory answer is labor-saving machinery and devices.

NON-DESTRUCTIVE METHOD OF BELT JOINING HELPS BIG CEMENT MILL SOLVE UNUSUAL PROBLEM.

AN UNUSUAL problem in the handling of hot cement clinkers with a temperature of 200 degrees and over, was recently solved at the plant of the Standard Portland Cement Company, Leeds, Alabama, in an interesting and cost-reducing manner.

The method decided upon for moving the clinker was a rubber conveyor belt, but the clinker could not be cooled sufficiently in the process previous to conveying to prevent scorching of the belt and its rapid destruction. The answer to this problem was found by running the belt at an incline of 12 degrees, so that the lower pulley dipped into a trough of water, thus carrying a film of cold water upon the belt, onto which the hot clinker from the loading hopper was deposited.

At this point a new problem was encountered; namely, how to join the belt so that the belt's full strength would be retained, and in a way which would withstand the extremes of temperature, the wear on the pulleys and the abrasion of the clinker. For this purpose Crescent Belt Fasteners were adopted, because they brought the belt ends tightly together in a snug joint, which made the belt practically endless on the pulley side, so there was no opportunity for clinker ash to get into the point and abrade the belt ends, and also because in this method of joining, no metal came in contact with the pulleys to cause wear, and a permanent joint was thus assured. Moreover, the exceptional strength of the heads of the Crescent Rivets and the formation of Crescent Plates prevented destruction of belt joint through abrasion by the clinker.

In six months of operation, this conveyor has carried 61,000 tons of clinker, and the Standard Portland Cement Company credits the saving of $300.00 in belt cost alone to this conveyor.

The belt used was Goodyear Hy-temp, which is made particularly to withstand temperatures up to 200 degrees, and is adapted for work on conveying jobs in mines, coking plants and cement factories where heat resistance and ability to withstand hard wear are prime requisites.

Not alone on heavy drives, such as tube mill drives, Griffin mills, crushers and heavy conveyors, are Crescent Belt Fasteners successfully used, but also on lighter drives of all kinds where dependability is an economic factor, as they assure continuous production.

As many readers of "Clay-Worker" may have equally perplexing drives for which the fastening plays an important part for continuous service, the Crescent Belt Fastener Company whose ad appears on page 644 of this issue, has just published a new hand book illustrating Crescent Belt Fasteners in use on many different kinds of belting and under different conditions, and giving full data regarding their use. It will be gladly sent to any reader of "Clay-Worker" upon request to the

IDAHO BRICK CONCERN PROSPEROUS AND BUSY.

At the annual meeting of the Idaho Fire Brick Company of Troy, Idaho, Mr. J. B. Watson, manager of the company, reported sales for the year amounting to $63,000 net, with a splendid operating profit. Notwithstanding labor difficulties and the miners' strike the plant was kept in continuous operation the year through. Payroll for the year just ended amounted to $33,000. Beside the payroll $10,000 was spent in Troy and surrounding territory for supplies and cord wood, which means that this plant is quite an asset to the town of Troy.

This company was formed in 1912, but 3 years ago the indebtedness was so great that the stockholders were prepared to burn their certificates. All indebtedness is now paid off and there is good reason to look forward to a dividend being paid at the end of the present year. The demand for Troy Idaho Fire Brick is greater than the production. It is, therefore, the intention of the company to increase the output this year.

RECENT PATENTS IN THE CLAYWORKING INDUSTRY.

[Full description and specifications of the following patents may be had by addressing **The Commissioner of Patents, Washington, D. C.,** and enclosing ten cents for each patent wanted. In ordering, give number of patent only.]

Trade Marks and Designs Patented.

No. 130,872. Fire Brick. Pyro Products Co., Chicago, Ills.

No. 129,508. Bricks and Building Blocks. Henry J. F. Ludeman, Pittsburgh, Pa. Use of name "Twinwon" for bricks and building blocks.

No. 1,336,025. Building Brick or Block. William T. Cook, Bowling Green, Ohio, patentee.

A building brick comprising a plurality of spaced webs forming a plurality of spaces, alternately oppositely inclined braces disposed in one of the spaces arranged with adjacent braces meeting at an apex at one of the interior webs, and other braces disposed in an adjacent space and meeting the same web at a point opposite the apex of the inclined webs.

No. 1,323,514. Building Brick. John J. Whiteacre, Canton, Ohio, patentee.

Patent given for a brick for building purposes made to consist of a continuous bed or body plate having an upstanding side and partition ribs forming air channels along each side and also in the medium portion of the brick, with an upright T-rib in each of the side channels partially closing the opening thereof.

No. 1,336,740. Ceramic Composition. Otto Gerber, Witten-on-Ruhr, Germany, patentee.

This patent is for a ceramic composition or article consisting of a pulverulent mixture of earthenware, china and glass molded into desired form and fired.

No. 1,336,751. Ceramic Article. Silas C. Linbarger, Niagara Falls, N. Y., patentee.

A new article of manufacture, consisting of a circular ceramic abrasive wheel having an arbor hole through same and having the body of the wheel immediately surrounding the arbor hole of a lesser density than the outer working portion of the wheel and integrally united therewith.

No. 1,336,762. Support for Ceramic Ware When Firing. Bertram B. Swinnerton, Beaver, Pa., patentee.

Patent awarded for a ware support for ceramic firing consisting of an open-end tube of refractory material rectangular in cross section.

No. 1,338,468. Mold for Bricks. Stoyan V. Tsanoff, Newark, N. J., patentee.

A patent for a mold for bricks having a frame of three sides having guide flanges adapted to co-operate with another similar frame to form the fourth side of said mold

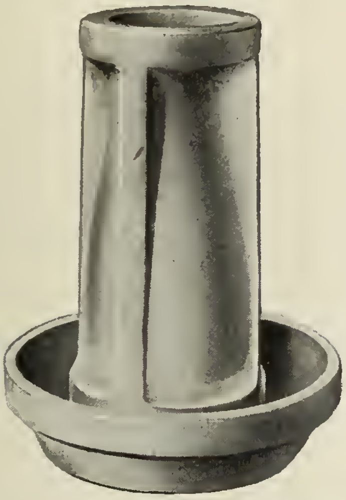
No. 1,336,867. Mold for Drain Tiles. Wayne F. Sloan, Pomeroy, Ohio, patentee.

In a mold for clay drain tiles, a cylindrical outer wall formed of resilient sheet metal having side portions which are slidable one over the other, straight bars secured to the said side portions and arranged parallel to each other and limiting the contraction of the side wall, a pin projecting from one bar, and a fastening latch pivotted to the other bar and engaging with the said pin.

CLAY MILK COOLER.

AN ARMY of Clayworkers known about Davis Brown, engineering department of The American Clay Machinery Co. Mr. Brown has been with the American Company ever since he was old enough to know the difference between a common and a face brick. Mr. Brown has been in the engineering department for some years and has designed some of the best clay working machinery ever produced.

Now Mr. Brown isn't just a designer of machinery, he is long on practical things of all kinds and especially those about the home. He is first of all a home man and anything pertaining to the home gets him going. And so it isn't surprising that Mr. Brown has become interested in something to prevent the milk from souring in the summer and from freezing in the winter. Primarily it may be that the cost of said milk and its proneness to sour, got Mr. Brown's goat.



Brown Clay Milk Coooler.

At any rate Mr. Brown got to studying the "demnaciousness" of sixteen cent milk souring and in reaching around for a good brick to shy at the offending bottle his mind reverted to "clay" and then light dawned upon him and he thought of a way to prevent the souring of milk and here it is.

Mr. Brown designed a tile with a closed end, something on the order of a "runner brick" used in steel plants. In the closed end, which is the top, Mr. Brown designed a cup to be filled with water. The rest is simple. Just fill the cup with water and put your milk bottle under the tile. The evaporation of the water through the porous tile reduces the temperature inside the tile and the milk stays cool and sweet.

If more water is desired the tile is set in a saucer of clay which is also filled with water and thus the cooler is equipped for a "desert of sahara" trip across the burning sand of a twenty-four hour day.

It might be thought that any old tile would do the trick but it won't. It took a lot of research work to get the proper design of tile and the proper mixture of clay but—"Leave it to Brown to work out all that." The man who has designed successful cutters, auger machines, pug mills and industrial locomotives wouldn't stop short of a successful clay cooler and the Brown Cooler has arrived. Mr. Brown expects to manufacture the cooler for the market.

—The American Clay Magazine.

GOOD ROADS.

By J. Ogden Amour.

The country is entering a period of road-building. Projects which were planned during the war are being put into effect. The Federal Government has made large appropriations, to be spent conjointly with appropriations by the various states. Good roads have become a watchword of post-war progress.

There is occasion for reflection in the fact that the greatest of ancient empires was conspicuous for its road-building. The Roman roads were the railways and telegraph of an age that did not know steam and electricity. They were the pathways of the imperial couriers and the imperial legions. These roads were the girders that held the empire together. It is customary today to admire the Romans for their practical sagacity, nowhere better exemplified than in their road-building.

In a manner "history repeats itself" in our newly bestirred zeal for constructing good highways. What to the Romans was a national necessity, has become for us an urgent need; and this by virtue of a modern invention—the motor car. I look for much advancement to grow out of the "motor age," and I am certain that this advancement will be contingent upon the attention we give to the improvement of our roads.

Those of us who have made observations for two decades have seen wondrous changes resulting directly from the use of the pleasure automobile. Once the city was the city, and the country was the country. Today they merge into one another. The city man knows the country as never before—is glad to have access to it and to live in it when possible. The country man knows the city and frequents it often. Small villages of yesterday have become the rural metropolises that one finds here and there, everyhere. This is all good, for it is well that a nation be knit together in the spirit of mutual understanding and in a reciprocity of advantages.

But there are better arguments for good roads than those which apply merely to the pleasure car. We are told, on the authority of the government, that farmers lose $300,000,000 yearly in marketing their crops because of bad roads. That is too much to waste. We should contemplate this figure in connection with the high cost of living.

There is no more serious problem before us today than the matter of reducing the cost of getting the products of the farm to the table of the consumer. One step, at least, in the solution is plain—better roads.

As an instrument of economy the motor truck has not yet come into its own. Efficient servant as it is in certain restricted realms, it now await the further development of interurban and country highways to reach the measure of its full attainment. It has power and speed that put it outside the class of the horse-drawn vehicle, and a nimbleness and flexibility which gives it a certain advantage over the railways. It is my expectation to see it assume more and more the function of the "short haul" as its own peculiar province; in part relieving the railways of those duties which they are least able to perform, and in part expanding the field of our national transportation system.

I say, therefore, all speed to the good road movement! It will cheapen our methods of distribution and help to bring the people of our country closed to each other. I commend its common sense and practical wisdom. It may be less spectacular than some of our other national issues, but it strikes deep into the roots of fundamental progress.

It just took one of those mountaineers who have been the butt of jokes and the inspiration for moonlight schools to carry off the laurels of American heroism. And that reminds us again that fame is no respector of origin.

NOTES FROM DIXIE LAND.

BRICK AND CLAY industries around Memphis, also at Nashville and Chattanooga, are quite active. Kilns are in operation and efforts being made to supply spring and summer trade. Shipments on railroads are still very much handicapped on some of the lines. The demand for pressed brick, fancy brick and fine tile products is very considerable at Memphis for business and semi-public structures. A few new brick residence are going up. Reports from Chattanooga say that the high waters in the Tennessee river came near extinguishing the fires of the brick kilns. Brick dealers, contractors, architects and every one affiliated with the building trade expect to see the next three months very active. The labor situation is not so acute as it was; the electricians called off their strike, the plumbers got their raise to $10 and the steam fitters were turned down and open shop declared. The plasterers and bricklayers were satisfied and conditions are more reassuring.

The Fischer Lime and Cement Co., who handle sewer pipe, fire brick and other clay products in connection with building materials, have taken out a permit for a large addition to their warehouse on Walnut street that will cost about $75,000. They have recently opened additional ware-rooms on South Third street.

Much terra cotta tile and fancy brick will be used on the Metropolitan and Palace theaters now under construction by the Fleischmann Construction Co. of St. Louis, Washington and New York.

The city board of education has let the contract for the Lauderdale Street school, which will be of brick, to Ozanne & McKnight, bid $38,047. Also contract for the addition to the Cummings school (brick) to R. F. Creson, bid $59,506. The plans were drawn by Architects Jones & Furbringer.

The Southern Potteries, Incorporated, Unicoi county, Tennessee, has filed a charter at Nashville. Capital stock, $300,000. Incorporators: C. C. Weisfield, J. W. Mackey, E. A. Vance and E. J. Owen, Jr.

The Nichols Brick and Tile Co of Dyer county, Tennessee, has been chartered recently with a capital stock of $25,000 by John M. Nichols, C. A. Rogers, E. L. Smith and E. E. McDavid.

The new Western Union building to be constructed at South Second street and Monroe avenue, Memphis, by C. H. and Edwin D. Boyle and O. B. Polk, Jr., will cost, when completed, about $200,000. The plans are by Architects Hanker & Cairns, Scimitar building. The building will be three stories and a basement with brick surface outside. The Western Union people have secured the building under a lease for more than twenty years.

The Memphis Brick Supply Co., 504 Goodwyn Institute, Memphis, report good spring demand on brick and deliveries backward. They are featuring facing brick, mantel brick, enamel brick, salt-glaze brick and terra cotta products and show very attractive displays on their floors.

John A. Denie's Sons Co. are featuring face brick, sewer pipe and terra cotta products and report business good in these lines.

Good progress is being made on the new brick structure on Madison avenue, Memphis, being erected for the home for W. J. Northcross Mantel and Grate Co. Their temporary location till this building is finished is 109 South Third street. They carry one of the largest lines of tile, mantel and special interior floor work and ornamental material businesses in the South.

Large deposits of silica are reported discovered about fifty miles south of Memphis, in Mississippi. Analysis by geologists and by the engineering department of Vanderbilt University indicate this to be a very fine article, used in its undeveloped state in chimney work for log cabins for years. It will now be developed by a Memphis company.

The contract for the new high school building at Blytheville, Ark., has just been let to McGehee Construction Co. of Little Rock for $104,230. This will be a three-story fireproof structure, 96x127 feet, twelve class rooms, to be completed by September 15. G. A. Edelsvard & Co. are the architects.

W. T. Hudson & Co. took out permits at Memphis for a building to cost $10,000 for W. E. Nickey, face brick with tile roof, 1433 Monroe avenue; and for a residence, 123 East Parkway, for J. S. Williams, cost $18,000, two-story, face brick, hot water heat, etc.

Bricklayers in Memphis are now getting $1.50 per hour, one of the highest schedules in the entire country. In some of the allied trades open shop was declared here, the steamfitters being among them.

J. A. Lay & Son, Brownsville, Tenn., dealers in lime, fire brick, sewer pipe and other supplies, report active May trade in that town. DIXIE.

PAVING BRICK PLANT AFFECTED BY SWITCHMEN'S STRIKE.

Activities of the Metropolitan Paving Brick Co., Canton, one of the largest manufacturers of brick in Ohio, were suspended for three weeks because of the rail tie-up, according to a statement made to The Clay-Worker representative by O. T. Witter, traffic manager for the company. "We did not turn a wheel for almost three weeks, and all of our plants were paralyzed," he said. "We have plenty of orders but were unable to fill one of them. Millions in building projects are held up here because of the inability to secure brick."

CLAY PRODUCTS COMPANY OPENS OFFICES IN ALTOONA.

The Burton Clay Products Company, with temporary headquarters in the Altoona Trust Co. building, Altoona, Pa., has removed its offices to the Elder & Fishbone building at Eleventh avenue and Eleventh street. This concern is a recent business enterprise and has just acquired some valuable lands suitable to its purposes near Punxsutawney. The officers and directors of the concern include: R. C. Burton, president; B. F. McCartney, vice-president; E. L. Study, treasurer; W. Frank Vaughn, secretary and counsel; directors: R. C. Burton, J. G. Clemson, Joseph Thorp, B. F. McCartney, W. Frank Vaughn, E. L. Study.

CLAY PHONOGRAPH NEEDLES.

A phonograph needle made of clay, which in trial has played 1,000 records, has been invented by H. R. Straight, secretary and general manager of the Adel Brick and Tile Co., Adel, Ohio. Patterns and molds to be used in the manufacture of the needles are being made by O. J. Whittemore, head of the ceramics department of Iowa State College.

The discovery was purely accidental. Mr. Straight happened to find a piece of red shale clay in his pocket while at home one day. He placed a bit of this shale in the end of the reproducer and the record was reproduced as clearly, he asserts, as if he had used the diamond point or steel needle.

The needles can be made of any clay that will make good brick or tile, according to Professor Whittemore.

Among the good things the clayworking industry has learned one of the best is that good prices are a good thing.

WORLD'S GREATEST AUTO RACE TO BE RUN ON BRICK PAVED TRACK.

THE classiest field that ever faced a starter will roll to the tape for the eighth international 500-mile sweepstakes on the Indianapolis brick paved motor speedway, Monday, May 31st.

Thirty speed champions of the old and new world are entered in the chase for the world's driving championship and the lion's share of $85,000, the largest purse ever hung up in motor competition.

Speed stars of four nations will take part in the melee: France, England, Italy and the United States, the Big Four among the allies of the late world war, now meeting in strenuous rivalry for world's premier racing honors.

Three four-car teams, Peugeot, Monroe and Duesenberg; two three-car teams, Ballot and Frontenac, and two two-car teams, Gregoire and ReVero, will endeavor to outgame and outgeneral each other, in addition to staving off the assault of the individual entrants, of which there are six.

France is represented by three teams aggregating nine members, Peugot, Ballot and Gregoire, and though numerically inferior to the United States, is an even bet for first honors, including on her roster of pilots four former winners: Jules Goux, 1913; Rene Thomas, 1914; Ralph DePalma, 1915, and Howard Wilcox, 1919.

Among the American contingent, Monroe, Duesenberg and Frontenac are names commanding vast respect, the Monroe delegation including Louis Chevrolet, Arthur Chevrolet and Roscoe Sarles; the Duesenberg team, Tommy Milton, Eddie Hearne, Eddie O'Donnel and Jimmy Murphy, and the Frontenac outfit, Joe Boyer, Gaston Chevrolet and Art Klein.

Individual entrants who are thought to have a chance, though operating at a disadvantage against team competition, are Cliff Durant, Chevrolet; Ralph Mulford, Mulford Special; Ira Vail, Philbrin, and Waldo Stein, Oldfield Special.

Indianapolis business men have offered a handsome prize totaling $20,000.00 which promises to have a big influence upon the race this year. Two hundred men each put up $100.00 to go to the leaders at the end of each lap. Each contributor will have a lap assigned to him and the winner for that particular lap will get that subscriber's one hundred dollars.

The speed kings are agreed that the tantalizing hundred at the end of each lap will be a big incentive to burn up the track. All declare this unique prize will go far towards making the race the fastest in the history of the 500-mile sprint.

THE CONTINUOUS COMBUSTION DOWN DRAFT AND MUFFLE KILN.

Henry Webster & Sons have issued to the trade a circular describing the Webster kiln in which all classes of goods can be burned, from common brick to the finest pottery, glazed ware, and enameled iron ware, etc. The kiln can be burned periodically as well as continuously, and there is no limit to the heat generated, or the speed in burning, according to the material. Every empty chamber is a drying chamber and can be used accordingly. Coal, gas, oil or wood can be used as fuel.

The furnaces are built to be used for filling, emptying and cooling at both sides of the chamber, as well as firing, no grate bars being required; a simple device of brick floor acts exactly as grate bars and is far superior, the cost being only a few old brick which are easily removed and replaced, if required, in a few minutes every time the kiln is filled or emptied.

Any ordinary brick burner can operate the kiln and the cost of operation and fuel for burning should not exceed one-third the cost of operation and fuel of the ordinary down draft kilns.

The Websters have patents on their continuous tunnel kiln and dryer, continuous down draft kiln and dryer and continuous muffle kiln. The office of these kiln experts and consulting engineers is at 628 Lexington Ave., Newport, Ky.

LANCASTER BRICK CO'S PLANT BEGINS OPERATION.

Designed by Local Engineers—Epuipped with Lancaster-Made Machinery.

THE LANCASTER BRICK CO., INC., has started operations at their model plant, located on the Lant farm near the Harrisburg pike. The company owns forty-seven acres of good clay land and will produce 50,000 building brick per day, yielding an annual output of over 13,000,000.

The machinery and equipment, as well as the brick plant installation, was designed by James P. Martin, manager of the clayworking machinery department of the Lancaster Iron Works, Inc., and all of this machinery and equipment was manufactured right here in Lancaster and furnished by the Lancaster Iron Works, Inc.

Mr. Henry Boettcher, of the Armstrong linoleum plant, designed the buildings and engineered their construction. It is claimed for this plant that it is one of the most modern of its kind in the United States. The clay is mined by electric shovel and delivered to the clay preparing machinery with automatic dump cars. It is first granulated and then disintegrated to a uniform fineness preparatory to going to the brick-making machinery.

The brick-making machine has a capacity of 100 bricks per minute. After the brick are formed they are automatically conveyed to the artificial dryers. The brick that are made during the day are dried during the night on racks of steam pipe by condensation or direct radiation. The following day the brick are conveyed on cars to the brick kilns where they are set for burning, which requires four and five days at a temperature of approximately 1,800 degrees Fahrenheit. A fleet of trucks is employed for quick delivery of the brick.

This brick plant is quite an addition to Lancaster's manufacturing plants, and will be a creditable factor in the future development of the town.

DEATH COMES SUDDENLY TO MRS. A. F. KLEYMEYER.

Mrs. A. F. Kleymeyer, wife of A. F. Kleymeyer, secretary and treasurer of the West Point Brick & Lumber Company, of West Point, Ky., died very suddenly at her home April 21. Besides her husband she leaves a nineteen months old daughter.

METAL MELONS.

When a big metal-producing corporation cuts a melon in the form of a 400 per cent. stock dividend, as was reported recently, it gives us cause for pause and sets us to thinking about profiteering and stock watering. We do not admire that governmental game of trust-busting, but the cutting of big melons by metal-working industries does not go well with current claims of cost as an excuse for the high price in metal products. Every industry is entitled to a fair return of profit, but this should not be taken as an excuse for cutting big melons and watering capitalization to increase the requirement for future dividends. Fair profit should properly include fair consideration for the other fellow—the consumer.

THE CLAY-WORKER

Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

Title registered, contents copyrighted.

THIRTY-SEVENTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " "	10.00
Ten copies, " "	15.00

Foreign subscriptions 65 cents additional.

☞Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to

226 East Ohio St. T. A. RANDALL & CO. [Inc.], Indianapolis.

Vol. 73 MAY, 1920. No. 6.

CURRENT COMMENT.

The kiln fires are burning.

* * *

Coal has been making quite a burning question of itself.

* * *

Present sugar prices don't serve to sweeten the temper of the average buyer.

* * *

After all, the greatest job on earth for the average man is that of being some youngster's dad.

* * *

The home-owning idea should not be made into merely a passing fad; it should be a permanent national policy.

* * *

Higher freight rates are coming. Be on the lookout for them and seek a voice in their making that clay products may not be made the goat.

* * *

Temper, like fire, is a good thing when kept under control and made to serve good ends. When it runs wild it is an implement of destruction.

* * *

Shorter work hours all around might make all happy if it wasn't for the fact that it curtails production, but somehow we have our doubts about it.

* * *

Sometimes the main difference between a common brick and a face brick is just a matter of a little more attention in the making and more care in the burning.

* * *

After all, there is no getting away from the fact that the eight hour agitators have contributed more to the condition of unrest than anyone else. It is not the 8 hours' work that hurts, but the 8 hours of idleness are what lead to trouble and unrest.

* * *

Let us realize now once for all that with war as with fire the best time to fight it is before its starts.

* * *

Dodging excess profit taxes by piling up business cost is poor economy, and the disposition to do this indicates that it is a poor tax law.

* * *

The trade paper is not only gaining in the esteem of the world, but it has ever led the work for purity in advertising and honesty in journalism.

* * *

We are being told that it will cost $88,000,000 a year to enforce prohibition. Cost is one thing and what it is worth is something else that must be counted and set up against the cost for a proper balance.

* * *

As the season advances there will probably be a realization that there is need to boost brick and encourage building, so keep your advertising department alive and in action that you may not be caught napping and short of orders.

* * *

Sugar and coal are two basic necessities for which there is no general substitute and which we cannot do without, so naturally the general public is feeling pretty raw over the way they are being dealt with by the producers and distributors of these items.

* * *

One trouble with some of our efficiency experts and would-be experts is that they are unable to understand when they have enough of a good thing. The efficiency idea followed to an extreme becomes both wasteful and irritating, and it also brings danger of reaction to unpopularity.

* * *

Business is business all right, but there is no getting away from the fact that preference in business dealing is often shaped by friendship and sentiment. The answer is, make friends and cultivate a reputation for fair dealing and good service. These are the elements that have made the N. B. M. A. an influential organization.

WORK IS THE BEST PRESCRIPTION.

There has been many and varied solutions offered by men big and little, widely known and obscure, for the so-called labor unrest. Also practically every organization, from Y huts to governmental departments, has given lengthy, wordy treatments to this subject. In fact, we are pretty well fed up on theories and solutions. Work is the best prescription of all—plain, honest, wholesome work. It is not only a sure cure for worry in the man who works, but if he will lay aside theories for a while and take up plain, honest work earnestly, most of the problems of the day will solve themselves, or rather will be solved thereby.

PROPER BUILDING CODES.

When the history writers of the future delve into the trade literature of today they will find some interesting contrasts in the matter of building codes. They will find that the clayworkers have been laboring with the city fathers to make better building codes. Also they will find that the lumber men, who are presumably antagonistic in the matter, are also making a plea for proper building codes. But they will find a difference in the cries and pleas. Under the pretense of wanting better building codes each is actually striving to promote its own interest. The clayworkers cry out against shingle roofing and frame construction, while the lumber men point to faulty brick flues as the main cause for fires, and so it goes.

There is such a thing as proper building codes, and it is about time for us to recognize this as a more important matter than promoting of class interest. The real interest to keep in mind in framing a proper building code is the interest of those who build and occupy buildings entirely apart from their specific business connections. This is the light to look at the matter from, and the clayworkers can well afford to look at it this way without emphasis or special coloring to make their product appear in a stronger light. The products of other building material will eventually have to look at it this way, and the sooner all take a broader view and get together in the matter of proper building codes in the right spirit the better it will be for the building material business, as well as for the general public.

CHIMNEY DATA FOR MEMBERS OF THE N. B. M. A.

Members of the N. B. M. A. are now receiving from the National Board of Fire Underwriters an illustrated bulletin on approved construction of chimneys. The bulletin takes on the form of an illustrated ordinance for cities and towns of all sizes, describing and illustrating in detail form of construction which is recommended by The National Board of Fire Underwriters. It is not merely a bulletin to file for future reference, but it is a good one to bring to the attention of local authoritiies to guide them in framing statutes that will aid in the laudable work of reducing fire losses.

ELIMINATING IGNORANT COMPETITION.

Broadly speaking, the best way to get rid of that ruinous kind of competition in trade which we call unfair is systematic education. This statement is based on the well-founded assumption that unfair competition is synonymous with ignorant competition. Generally it is ignorance of cost which leads a man to making prices that are too low.

The cost guesser is the bane of the business world, and the way to better understanding and to curtailing this unfair competition is plainly through developing a better and more general knowledge of cost. It matters not what schemes are hatched to supply information of prices current and to inspire the asking of higher prices, when we get down to the real facts there is nothing better than a knowledge of cost as a basis for price-making.

When the members of the trade get better acquainted with each other through visiting and exchanging letters and when, through this better acquaintance, they will develop a more thorough understanding of cost, we will be in a fair way to eliminate what is spoken of in the trade as ignorant competition.

TRUCK TALK.

The doubting Thomases and those who have held back and voiced objections to the uses of motor trucks for handling brick and other clay products may now put their arguments into the discard, because the only worth-while truck talk now is that which centers around what particular size or make of truck will render the best service under given conditions.

Today the truck is not only the main factor in local delivery, but it reaches out and relieves short railway hauls at such a rate that "ship by truck" is a common slogan all over the country today. Moreover, the slogan is being backed up by practical and spectacular demonstration, which leaves no room for doubt that the truck today occupies a commanding position in all short haul work.

The clayworking industry has been a little slow in the past, perhaps a bit too conservative, in taking up the trucks, but now that they are a proven proposition the industry is not only turning to them for delivery purposes, but it is extending their use for inter-plant work in an interesting manner. In a word, the truck which a few years ago was viewed as a probable coming possibility is today one of the great aids in carrying on the work of the industry.

STATE AND COUNTY FAIRS.

It has been a consistent hobby of The Clay-Worker to urge the manufacturers of clay products to take an active interest in local and state fairs that they may not only be showing thereby proper public spirit, but may improve their own business and promote better building and better farming. This fact is mentioned now because this interest should manifest itself early, and not merely during the short period of the fairs' duration. Get in touch with those who have local and state fairs in charge and see what can be done in the way of making a proper showing of clay products for home building and farm uses. Then, when you have arranged to make proper displays, turn to and help promote the interests of the fair. Good should result from it.

PORCH FLOORS.

Brick has already made splendid progress in porch work, that is, in the building of walls and piers, and now it is in order for the clayworking industry to push the idea of clay products a little farther and include clay tiling for porch floors. The cement floor is not only porous and unsightly, but it is always more or less gritty and dusty, and there should not be much difficulty in convincing home owners that the porch floors proper should be faced with good clean tile. The tile floor not only has beauty, but also has practical value, and it is the ideal thing to go along with brick piers and walls. A little mission work these days would do a lot of good in promoting the use of tile for porch floors and should contribute materially to both the beauty and value of the porches.

THE BY-PRODUCTS OF CLAY WORKING.

Several times in recent years the idea has been ventured by The Clay-Worker that we should concentrate some earnest attention in our research work toward the idea of developing by-product possibilities in clayworking. Only research and experiments will tell whether or not there are real commercial possibilities along this line. It is a known fact, however, that some of the most wonderful progress in many other lines of industry has come through by-products development. We have a shining example of it in the meat-packing industry, the oil industry, cotton industry, the coal industry and some in the cement industry.

Prior to the war this subject was taken up and inquiry made of George Ottis Smith, director of the U. S. Geological Survey, because at that time there was a live interest in the subject of oil shales.

Director Smith in reply suggested some possibilities in recovering potash from shales by volatilization in a furnace in which there should be obtained as a by-product building brick molded from the hot plastic clinkers. Also he made reference to a patent (U. S. 1,157,437) to recover potash compounds from rocks in which they are contained in silicate combinations.

During the war period one result of the shortage and high price of potash was efforts at producing potash from shales, some of which have previously been used for brickmaking. This effort was not a brick or clayworking effort and the passing of war conditions seems to have put a quietus upon it.

It shows an awakening interest, however, and suggests possibilities from research.

The idea specifically in mind is the possibilities of developing some commercial by-products in connection with clay products which may be obtained by some process of extracting chemical material from clay wares. The process of drying and burning. The idea so far is general with no definite product in mind or process to suggest. The thought is that once we get a start at this line of research and the varied field of possibilities the way may be opened for developing some important side lines to clayworking.

Practically all of the industrial progress of the world comes from study and research work, and a great percentage of it is the direct result of individual enterprise and genius. We have both the enterprise and the genius in the clayworking industry, why not put some of it to work experimenting for by-product possibilities?

AMERICAN COMPANY PURCHASES ADDITIONAL LAND.

Ten acres of valuable factory land in the heart of the industrial district has been acquired for $21,015 and has been transferrd to the American Clay Machinery Co. (Hadfield-Penfield) Corporation of Bucyrus, Ohio, for shop improvement purposes in the southern part of the city.

NEW LICENSEE OF THE DUNN WIRE-CUT LUG BRICK COMPANY.

The Patton Clay Manufacturing Co., Patton, Pa., one of the leading paving brick plants in Pennsylvania, has become a licensee of The Dunn Wire-Cut Lug Brick Co. of Conneaut, Ohio, and will engage in the manufacture of wire-cut lug paving brick.

NEW SALES MANAGER FOR THE CELITE COMPANY.

Mr. Lyle Stockton Abbott now heads the eastern sales department of the Celite Products Company, manufacturers of Sil-O-Cel insulating products, at 11 Broadway, New York. Mr. Abbott succeeds Mr. H. A. Mannshardt, who recently resigned.

ILLUSTRATED BULLETIN READY FOR THE TRADE.

The Celite Products Company of 11 Broadway, New York, is issuing an interesting bulletin known as B-6a, describing the insulation construction of different types of boilers. The bulletin is illustrated with diagrams and views of various installations, and copies will be sent on request to all persons interested.

For Sale Fire Clay

Are you in the market for fire clay, analysis of quality given below. Can furnish any desired amount, and will be glad to send sample on request.

ANALYSIS

Alumina	23.85
Silica	63.51
Lime	.55
Manganese	.76
Iron	1.56
Alkali	3.57
	99.73

Please advise your needs and will quote you.

S. M. CROFT,
615 Fifth Ave., Huntington, W. Va.

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.,

required by the act of Congress of August 24, 1912, of The Clay-Worker, published monthly at Indianapolis, Ind., for April 1, 1920.

State of Indiana, County of Marion, ss:

Before me, a notary public in and for the state and county aforesaid, personally appeared Theo. A. Randall, who, having been duly sworn according to law, deposes and says that he is the editor and business manager of The Clay-Worker, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

That the names and addresses of the publisher, editor, managing editor and business managers are:

Publisher, T. A. Randall & Co., Inc., Indianapolis, Ind.

Editor, Theo. A. Randall, Indianapolis, Ind.

Managing Editor, none.

Business manager, Theo. A. Randall, Indianapolis, Ind.

Owners are T. A. Randall & Co., Inc., Indianapolis, Ind.; Theo. A. Randall and James E. Randall, Indianapolis, Ind.

Known bondholders, mortgagees, and other security holders, holding 1 per cent. or more of total amount of bonds, mortgages, or other securities: None.

That the two paragraphs next above, giving the names of the owners, stockholders, security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Signed) Theo. A. Randall, Editor.

Sworn to and subscribed before me this 29th day of March, 1920.

(Signed) CHRISTA A. LEWIS, Notary Public.
[Seal] My commission expires June 30, 1921.

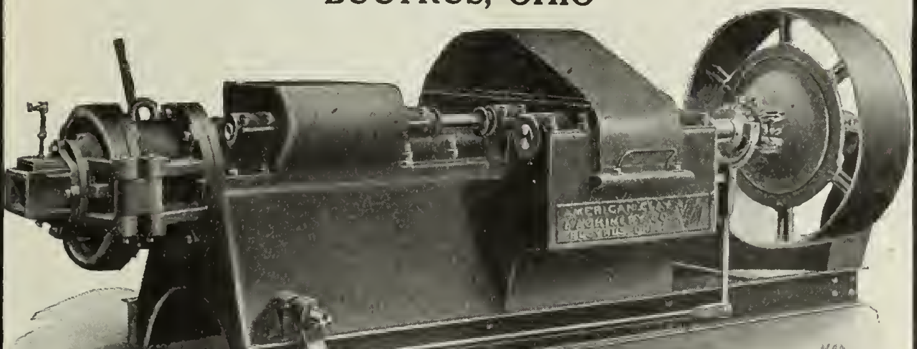
Paved Roads

Tax Payers' Value

Here is a model road—three miles of it built north out of Bucyrus, Ohio. It is good for half a century of hard usage, because it is built right. There is real value in this road even at twice the cost.

Below is the machine best adapted for making the excellent brick required for this excellent type of road. This is the American No. 290 Auger Machine. It is the "Brick Maker's Value" for making Tax Payers' Value brick. It's good for half a century, too. Get specifications. Like Brick roads, the No. 290 is worth more because it's "Built to Last."

The American Clay Machinery Co.
BUCYRUS, OHIO

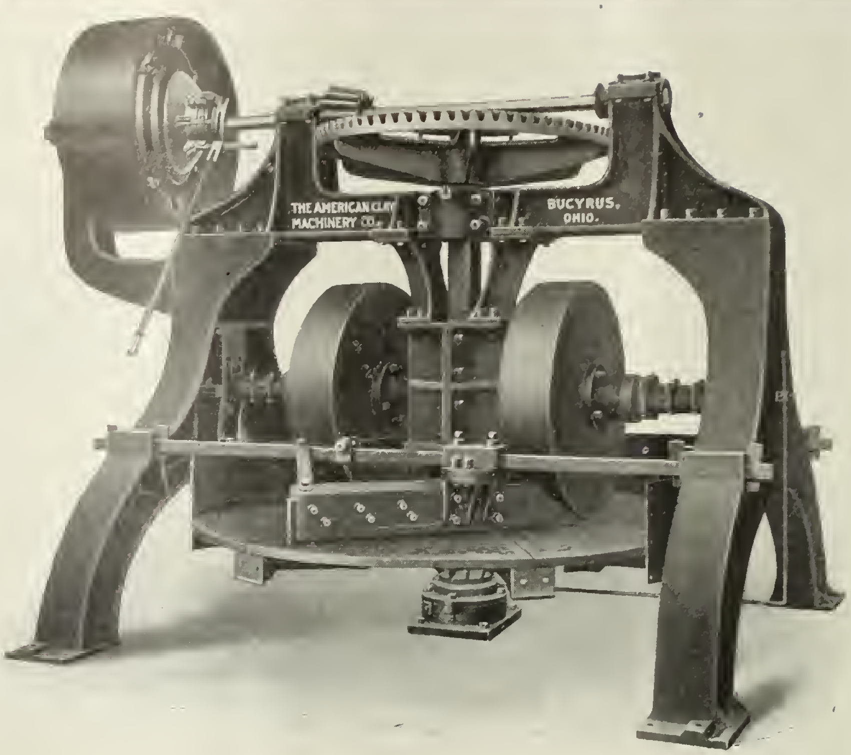


American Nine-Foot Dry Pan

If there was any way to make this American Pan better we would do it. Many users say it's the best on the market. Others say it couldn't be improved.

We have aimed to make it a credit to our line and to please the purchaser, and we are glad to say it does both.

Ample in proportion, superior in workmanship and design, excellent of material. Get the Pan Bulletin which tells all about this Pan.



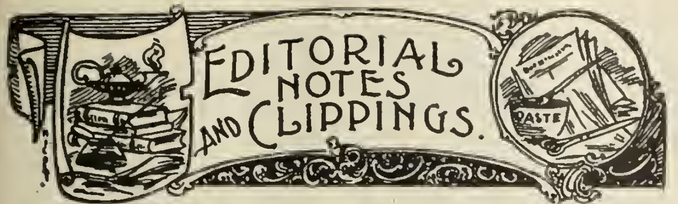
American Nine-Foot Dry Pan

American No. 282 Pug Mill

No better Mill made. Strong and durable. Large capacity. Light on power. Thorough in its work. Get the No. 282 Bulletin.

The American Clay Machinery Co.
Bucyrus, Ohio, U. S. A.

American No. 282 Pug Mill



EDITORIAL NOTES AND CLIPPINGS.

The Herbst Drain Tile Company of Swayzee, Ind., has filed articles of dissolution.

The Thornton Bros. Brick Co., of Rudyard, Mich., has increased its capital stock from $12,000 to $50,000.

The Bison Brick Co., of Buffalo, N. Y., has lately been incorporated by P. T. O'Malley, Wm. J. Hughes and Thomas E. Boyd, with $25,000 capital stock.

The Kentucky Refractories Co., Russell, Ky., has been incorporated in Delaware with a capital stock of $1,500,000 by Clyde K. Turly and D. E. Ernst, Russell, and Vincent R. Coon, Detroit, to manufacture refractory materials.

R. E. Bruner is at the head of a company which is being organized at Kansas City, Mo., for the manufacture of floor and wall tile. A plant will be ereceted at Independence with a yearly capacity of 1,000,000 square feet of tile.

The McArthur Brick Co., McArthur, Ohio, has purchased the Wilson Swartz farm of 37 acres adjoining their property on the east. This farm is underlaid with a fine vein of coal which the company will open up and use in the operation of their plant.

The Apex Brick Company of Apex, N. C., has been organized with C. A. Johnson of Raleigh, president; J. R. Cunningham and L. J. Johnson, both of Apex, treasurer and superintendent. The company has acquired the Friendship brick plant, and will install additional machinery.

The Wooster plant of the Medal Paving Brick Co., of Cleveland, Ohio, is now turning out hollow building tile, in addition to its regular output of paving and building brick. This is the third of the several plants owned by the Medal Company to take up the manufacture of hollow tile.

Construction work has been started on the plant of the Comanche Brick Company, at Lawton, Okla. Machinery has already been ordered. John L. Salway is president of the company and J. W. Smith has charge of the work of building the plant and will be superintendent when the factory is ready for operation.

A company composed of the men who originally owned the Hebron Pressed Brick & Tile Company of Hebron, N. D., have taken over the plant. Charles Weigel is president of the company and K. J. Farrup, vice-president. Together with A. M. Halstead, S. G. More and John Christiansen, the officers named will comprise the board of directors.

The annual meeting of the National Brick Company of Laprairie, Limited, Montreal, Quebec, Canada, was held April 20, when shareholders were presented with the figures for the year recently closed, as well as with a forecast for the current year. In this latter connection it was pointed out that there was sufficient building now going on in Montreal to warrant capacity brick business for the company throughout 1920, so that the outlook was cheerful. Retiring directors were re-elected without change, as follows: A. A. Ayer, president; R. M. Ballantyne, vice-president; J. N. Greenshields, K. C.; James W. Pyke; Maj. Gen. E. W. Wilson; Dr. Milton Hersey; Paul Galibert, all of Montreal.

The International Clay Development Co., was capitalized at Toledo early in the month at $50,000 to become the parent company for a number of subsidiaries to manufacture porcelainware and machinery for its production by an automatic process. One of the first products which will be turned out by the new company will be porcelain milk bottles, it is said. Those who are familiar with the development of the new process declare that the milk bottles will be produced much cheaper and be of more durable material than the present glass bottles. Henry A. Page, president of the Page Dairy Co., and William Telling of Cleveland, are the principal incorporators. The first factory will be built at a point somewhere between Toledo and Cleveland. The porcelain will be manufactured by a new process invented by O. C. McCormick of Cleveland. Wesley S. Thurston, Jr., has had charge of the formation of the company.

The Arkansas Brick & Tile Company of Pine Bluff, Ark., will improve and add to its plant.

H. S. Teal is at the head of a company which has been organized at Birmingham, Ala., to erect a fire brick plant of 50,000 daily capacity.

The Bowerston Clay Co., Uhrichsville, Ohio, with a capital stock of $150.000, will erect a plant near the village of Bowerston to engage in the manufacture of hollow building blocks.

The Macon Brick Co., of Macon, Ga., has been granted a charter. E. M. Elliott, R. G. Jordan, and J. B. Wall are interested. They will at once erect a plant with 50,000 yearly capacity.

The Nebraska Clay Products Company has taken over the plant and holdings of the Humboldt Brick Company at Humboldt, Neb. Extensive improvements will be made in the plant including the erection of new kilns.

The Clayton Brick & Tile Company of Wilmington, Del., has been incorporated with $200,000 capital stock, to manufacture brick, tile, etc. The incorporators are T. L. Croteau, M. A. Brunt and S. E. Dill, all of Wilmington.

An early morning fire at the Golding Pottery Supply Company factory, Wilmington, Del., destroyed a storage shed and machine repair shop. The main mill was not injured. The output of the concern is mainly ground flint and spar, which is used by several large pottery manufacturers in Trenton.

The plant of the Universal Clay Products Co., at Sandusky, Ohio, was completely destroyed by fire the latter part of April. The loss is estimated at between $75,000 and $100,000, which is only partly covered by insurance. W. J. Frey, manager of the plant reports that same will be rebuilt.

C. A. Bryant & Sons have their new brickmaking plant at Malvern, Ark., well under way, and expect to be making brick now in the very near future. The Acme Brick Company of Ft. Worth, Texas, has purchased 200 acres of land near Malvern on which they will erect a large brickmaking plant.

The P. Bannon Pipe Company, Louisville, which recently had a serious fire damage to its hollow tile plant at Ninth and Magnolia, has started to work equipping a new plant which will cost $70,000. It is expected that the new plant will be completed by the first of September, and this time it will be constructed of hollow tile and will be safe against future fire damage. The new plant will cover a space of 125 by 160 feet.

The new plant of the New Castle Mining & Products Co., of New Castle, Pa., is now in full operation turning out 40,000 brick per day. This will probably be increased later on. The plant is electrically equipped and all machinery is up-to-date in every particular. They have eight kilns which are burned by the Boss system. From the kilns the brick go direct to cars which are run into the plant on depressed tracks. The officers of the company are M. A. McClure, president; G. T. Weingartner, vice-president, and C. H. Andrews, secretary-treasurer and manager. Mr. Andrews had entire charge of the construction of the plant.

The work on the $500,000 brickmaking plant of the American Clay Products Company at New Hope, Pa., is progressing. The company has 700 acres of land along the Delaware River which will give them an unlimited supply of clay. They are erecting 100 houses for their employes and will have same ready for occupancy before the plant is completed.

The Twin City Brick Company of St. Paul, Minn., has taken over the plant of the Red Wing Brick Company at Red Wing, Minn., installed new equipment, made extensive improvements and will operate same to capacity. The plant has been idle for about eight years. John Bombach is superintendent of the works.

The Kane Brick and Tile Company of St. Marys, Pa., which owns and operates a plant at Meredith, Pa., has started on the enlargement of their plant by the building of a number of larger kilns. It is also their plan to erect in the vicinity of the plant some 20 houses for the convenience of their employes, who at the present time, for the most part, live in Reynoldsville and other nearby towns and must go to and from work by train. They also have planned the erection of a church and school house and have petitioned the Jefferson County courts that a public road be opened from the site of the plant at Meredith to a point on the Brookville-Reynoldsville highway near Emerickville.

E. L. Deans of Whaleyville, Va., is in the market for press brick machine.

F. W. White is at the head of a company which will erect a plant at Philadelphia, Miss., for the manufacture of brick and tile.

Fire supposed to have been caused by lightning did damage to the extent of $50,000 to the plant of the St. Louis Hydraulic Brick Company located at Collinsville, Ill.

A. W. Vorney and R. Farmer, both of Norfolk, Va., have organized the Atlantic Brick Co., with $25,000 capital stock, and will erect a brickmaking plant at Oceana, Va.

The Mississippi Oil & Gas Co-operative Joint Stock Company has been incorporated with J. M. Chafee as manager, to develop a deposit of ball clay at Ackerman. Miss.

The Monarch Brick Co., of Manhattan, New York City, N. Y., has been incorporated with $50,000 capital stock by J. Briskman, and others of 1381 Eastern Parkway, Brooklyn, N. Y.

Controlling interest in the Van Briggle Pottery at Colorado Springs, Col., has been purchased by I. F. and J. H. Lewis, of Springfield, Ohio. The former has assumed management of the plant.

The Krauss Research Chemical Laboratories Co., has purchased the plant of the Pittsburgh Tile Co., at East Liverpool, Ohio, and put same in operation, manufacturing fire brick. The plant had been idle about a year.

The first kiln of 100,000 brick was recently opened at the new plant of the Chapman Brick Company, Memphis, Texas, and was an excellent burn all through. Mr. Chapman was much pleased with the results of his first burn.

The Shepherd Construction Company of Wilkesbarre, Pa., has purchased the John Keim brick yards at Danville, Pa. Heretofore these yards have only been operated during the summer months, but modern machinery will be installed that will enable the new owners to make brick all year.

The O. W. Ketcham Terra Cotta Co., of Philadelphia, Pa., with plant at Crum Lynne, Pa., is looking for a new location for a terra cotta factory, having outgrown the present site. Some consideration has been given to a tract of land in Maryland, containing good clay deposits.

C. C. Davidson, Willis Davidson, Sarah Davidson and Wm. Gillis, of East Liverpool, Ohio, have been granted a charter by the state of West Virginia under the name of the Davidson Porcelain Company, with a capital stock of $100,000. The newly formed company is now having erected a three kiln plant near the west end of the city. The plant will employ about 75 operatives.

Ground was broken the latter part of April for the new plant of the Falls City Hydraulic Brick Company of Louisville, which is being erected at Midway, Ind. The capital stock of the company is $50,000 and the officers are George C. Kopp, president; H. W. Elliott, vice-president; Charles Leap, secretary, and Walter E. McCulloch, treasurer. Capacity of the plant will be 80,000 bricks a day.

Henry S. Belden one of the pioneer brick manufacturers of northern Ohio, died at his home in Canton, April 21. Mr. Belden was 79 years old, and spent all of his life in Canton and was at one time Mayor of the city. He is survived by three sons, one of whom, Paul S. Belden is secretary and general manager of the Belden Brick Company, of which Mr. Belden was president at the time of his death.

Stockholders of the Harbinson-Walker Refractories Co., Pittsburgh, Pa., will hold a special meeting on June 23 to vote on the proposition to increase the capital from $27,600,000 to $36,000,000. If ratified, a 50 per cent stock dividend on the common stock will be paid to the stockholders on July 15, of record July 5. The company has declared a quarterly dividend of 1½ per cent on the preferred and common stock.

A new corporation known as the New York Clay Co., has been formed, with Russell E. Watson, A. Dudley Watson and Margaret A. Harkins of New Brunswick, N. J., as incorporators, to take over the works of the defunct New York Clay Products Co. at Sayreville, N. J. It has a capitalization of $50,000. The New York Clay Products Co. became solvent and its assets were sold under a judgment obtained against the firm, about a year ago. The new firm will continue operation of the property at Sayreville, where the company is engaged in the manufacture of clay products.

An overheated smokestack started a fire on the roof of one of the buildings of the Onandaga Pottery at Syracuse, N. Y., recently. The loss was slight and almost entirely covered by insurance.

Robert C. Mitchell, formerly associated with the Farr Brick Company of Cleveland, Ohio, has moved to Omaha, Neb., where he will have charge of the Omaha office of the Reliance Brick Company.

Thomas J. Evans, president of the Evans Clay Manufacturing Company of Uhrichsville, Ohio, died April 15. Mr. Evans was 74 years old, and a pioneer in the clay industry, being one of the first manufacturers of clay products in the Tuscarawas district.

Change of Base.

Ellis Lovejoy, consulting engineer to the clay and refractory industries of Columbus, Ohio, announces a change in his mailing address to 480 W. Sixth Ave., and his laboratory to 1538 N. High St., from the Schultz building where he has been located for so many years.

Samuel Geijsbeek, chemical engineer of the Geijsbeek Engineering Co., writes that his firm has moved from Portland, Ore., to 635 Burke building, Seattle, Wash.

PHILADELPHIA BRICK MANUFACTURERS REMEMBERED BY UNCLE SAM.

Certificates of appreciation by the War Department for services rendered in furnishing supplies during the period of the war was recently awarded a number of Philadelphia manufacturers. Included in the number were the following brick and terra cotta manufacturers: Joseph T. Bryne, Boulevard Brick Co., William Conway, J. H. Early, Jarden Brick Co., Keystone Brick Company, O. W. Ketcham, Lueton Brick Co., Philadelphia Brick Co., North Philadelphia Brick Co., H. A. & C. B. Siner, and F. Seitter's Sons. In making the presentation, General Robert L. Bullard assured the manufacturers that their efforts to respond promptly to all of the demands made upon them had its part in the winning of the war and would always remain as a credit to the city of Philadelphia.

FORT DODGE CLAY PLANT CHANGES HANDS.

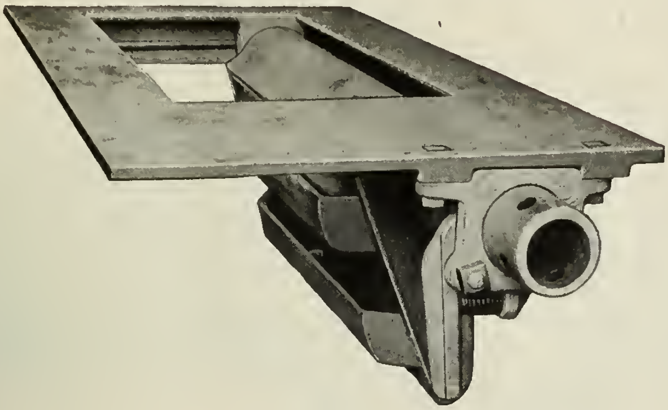
A. R. Batley, for a number of years located at Kansas City, writes that he is now vice-president of the Coates Manufacturing Co., of Kansas City, Mo., with factories in Fort Dodge, Iowa, Lawrence, Kansas, and St. Joseph, Mo. Mr. Batley is manager of the Lawrence branch, which is operated under the name of the Lawrence Tile Co., and also oversees the work at Fort Dodge and St. Joseph. The Coates Company recently purchased the plant of the Fort Dodge Brick & Tile Company, where they intend to manufacture silo blocks, and a number of additional kilns will be built for that purpose. The company intends to build other clayworking plants in the near future.

BRICK MACHINERY FOR SYRIA.

The Bureau of Foreign and Domestic Commerce, Department of Commerce, has received a communication from a general importing firm in Syria which desires that it be placed in touch with American manufacturers of brick and brickmaking machinery which it will purchase outright. References can be given. All details and information will be furnished our manufacturers who may be interested by addressing the Bureau of Foreign and Domestic Commerce, Washington, and referring to inquiry number 32358.

If the prices of metal and other material used for roofing keeps going higher, maybe we will reach the point eventually where the clay tile roof will be lowest in first cost as well as cheapest in the end.

25% to 40%



The Furnace Gas Producer with Trunnion Dumped

Burning Paving Block with Furnace Gas Producers

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In

TIME—FUEL

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USING

Your Present Kilns

By Means of

The

Furnace Gas Producer

Try It On One Kiln

International Clay Machinery Co.

DAYTON, OHIO

N. Y. Office—136 Liberty St.

SEEN IN NEW JERSEY.

DEMAND for common brick at all New Jersey points increases and while prices have not advanced recently, they are held firmly at former figures. Newark is getting $32. Jersey City is asking $32, or a little more, while Paterson's price has been as high as $36, all delivered. Trenton is getting $26 to 27. Ridgewood wants $32. Hackensack quotes $27 to $30. New Brunswick is asking $27. Rutherford gets $33. And these prices are quoted in most other localities. Some have been sold in the Raritan section as low as $25, but $27 is nearer the correct figure. Builders have begun their operations in most sections and the difficulty now is to get sufficient brick to satisfy demands. Movement into consumption will be heavy. Where the point of delivery can be reached by trucks the situation is normal, but the freight tie-up caused a good deal of difficulty where shipment by train is required. Paterson is now urging the opening of the Morris & Essex canal and the dredging of the Passaic river to prevent such hold-ups in the future. Price doesn't seem to make any difference. It is getting the required brick that is worrying buyers and builders.

The March building permits in Newark totaled $1,622,804. Of this sum $1,552,395 was for brick construction.

The Hackensack Brick Co. began operations April 15. The plant has been electrified and is in shape now to turn out 70,000 per day. Four pumps are now busy in the pits, and before this is in print the clay will be ready for use. The management says that orders are coming in satisfactorily. Delivery is wholly by motor, which is more satisfactory. The company has been fortunate for the past two or three years in having its customers near enough so they can be reached by truck.

Homes are badly wanted in this State and cities are endeavoring to find ways by which they can help. A build-now campaign seems to be in full swing everywhere. Probably never before have so many homes been wanted at one time. In the metropolitan district the demand has increased largely because of the high rents charged in the cities. The railroad strike, which tied up freight traffic on the suburban roads, caused a setback in this flight to the suburbs, but now that it is over it is quite likely that the same situation will prevail as before. New houses must be erected to meet the increased demand, and clay-working plants are running to capacity where they have started to furnish the material. The campaign seems destined to make a great difference in the districts adjacent to the larger cities.

Victor W. Main, who has been with the Keaseby Works of the National Fireproofing Co. for thirty-one years, has been granted a three months' leave of absence for the purpose of recuperating his health. For eighteen years he has been in charge of the Raritan plant. W. Guy Weaver, superintendent of the Standard plant of the same company, has been named as temporary superintendent in Mr. Main's place and will alternate between the two plants until Mr. Main returns. While his friends have known that he was not in the best of health, they did not realize that his condition was so serious.

Along the Hackensack river prospects are said to be more promising than they have been since the war started. All the yards are preparing for a good season. Some are in operation as this is written; others will start as fast as they can make preliminary preparations. Some are installing new equipment, realizing that the old equipment is no longer suitable. They are finding that their new methods are increasing their output per unit, thus reducing proportionate cost. While prices are uncertain, it seems probable now that they will run around $21 to $22 at the yards. Motor trucks are to be used more than ever in delivering.

I. E. Gardner, a progressive manufacturer at Hackensack, has his yard electrically equipped and will operate to capacity this season. His new equipment enables a larger production per unit and faster work in all departments. He operated two motors in delivery last year and contemplates adding to the fleet if business requires it this season. He had about 300,000 brick on hand when the building season opened this spring, but with a demand from Newark, Passaic, Paterson and numerous smaller communities within reach, he has very little left now. The first burning will be ready for delivery at the earliest possible moment, but the weather has been cool and stormy, which has hampered operations some.

Partition tile is selling at New Jersey points at from $115 per thousand square feet and up. The quotations are: 2x12x12, $115.80; 3x12x12, $185.30; 4x12x12, $208.40; 5x12x12, $280. These are the prices from the factory to dealers. The builder pays a substantial advance over these figures.

In the Raritan section operations are well under way. Yards which do not run winters are in position to get to work before long and they look forward to a capacity output this season, or as near capacity as the condition of the labor supply permits. Some of the yards have introduced improvements and have installed new or more machinery, with the result that the output can be increased. The prospect for sales is promising.

The labor situation promises to retard operations in many New Jersey plants. Thus far the supply of unskilled labor has been insufficient to meet requirements, and nothing in sight indicates increase. The situation is as unsatisfactory as it was last season, with some exceptions. Some manufacturers are installing labor-saving machinery for the purpose of increasing output per man, while others are proceeding with their usual work as best they can, hoping for increase in the labor supply and looking forward to the time when some of the hampering influences will disappear. The arrogant attitude of labor is exerting some influence upon the situation and perhaps is instrumental in preventing employers getting all they might if it were not for this condition. Given sufficient labor, the yards in New Jersey would all turn out a capacity quantity this season. The orders are here and the prices are satisfactory, but if they cannot get the brick made the season must necessarily see less distributed than would be the case under better conditions. A. L. B.

AMONG PHILADELPHIA YARDS.

BUILDING OPERATIONS are to be upon an extensive scale this season and builders are searching the market for the necessary brick and other burned clay materials, but success in finding them in the quantity wanted is a different matter.

Common brick is quoted at $25 to $37 delivered on the job. For No. 1 standard fire brick $70 is asked and supplies are low. Partition tile is priced at $150 per 1,000 square feet. Supplies are low and increases seem unlikely.

William Conway, who operates all the year plant, on Walnut street says that demand is good. He is getting $25 delivered and is utilizing five-ton trucks in delivery.

At other Pennsylvania points Standard No. 1 fire brick are quoted at $41 to $45, f. o. b. works. Second quality are sold at $35. Silica brick are quoted at $50. A quality not quite so good can be bought for $45. Probably these prices vary somewhat in different localities, but they afford a reasonably accurate basis for comparison. No one sees any indication of price reduction. Labor scarcity looms large in some localities and always the high cost of labor must be considered in making estimates for the season.

The Modern Way

1. Only one central coal location
2. Clean kiln yard
3. No cleaning of furnaces or re-lining them, or bag walls ever required
4. Minimum labor attention and responsibility
5. Much shorter kiln burning periods
6. Heavy saving of fuel
7. Increased burning capacity without additonal kilns.
8. A better and more uniformly burned product
9. Avoids smoke nuisance absolutely,
10. And many other advantages

The Old Way

1. Excessive and wasteful burning conditions
2. Requires wasteful manual labor
3. Longer kiln burning periods
4. Uncertain burning results
5. Expensive product wasted through improper burning
6. Heavy kiln repairs needed
7. Unsightly conditions, etc.

THE DAY OF FIRING KILNS BY HAND IS PAST

The Underwood Producer Gas System of Burning Clay Ware in Up-Draft and Down-Draft Kilns has proven that it is scientifically, theoretically, fundamentally correct.

This proof is indisputably established by the records made in many installations now in operation.

The problem of burning your ware is the greatest of all stages of manufacture. No committee can investigate all burning systems in use and report on all of them to each existing plant and advise what is best for each. But we will fully investigate your burning conditions if you will investigate the Producer Gas Burning System for periodic kilns. We will then compare our investigations and co-operate to solve your burning problem on the highest economical baseis.

If you want to reduce your burning costs, let us begin co-operating now.

Write for the interesting "Story of Clay."

The Manufacturers Equipment Co.

Dayton, Ohio, U.S.A.

Mention The Clay-Worker.

Written for The Clay-Worker.

PACIFIC COAST NEWS.

CONSTRUCTION of new buildings in San Francisco has seemed slow during the past month, and especially does it seem so when one takes into consideration the number of more or less important structures which have been planned and announced for immediate construction. At first thought the high costs of material and labor would indicate the cause of the slowness with which these buildings materialize. But a more careful investigation shows that the real reason is scarcity rather than cost of both materials and skilled labor. High prices have ceased to alarm the prospective builder. There is need of all the buildings planned and rents at a good figure are assured, but when deliveries of steel structurals are postponed until "the fourth quarter" as possibly next spring, it makes the would-be builder hesitate.

The switchmen's strike added to the troubles of the builders. Freights have been irregular and uncertain since April 1, and even with the assurance that the strike has been won by the railroads there seems little prospect of immediate improvement. Moreover, under present conditions of operation the same care in handling freight does not seem to be exercised. One brick dealer bought up three cars of tile from Los Angeles a few days ago and reports that 25 per cent. of them were broken in transit. As the tile was needed for immediate use, the prospect of ultimately collecting damages does not fully satisfy either the dealer or the builder who needed the material in order to finish up an important job.

The trouble over the freight situation operated to the serious detriment of the brick manufacturers. Those who are located near water transportation have managed to keep running at full speed, but those who have to depend entirely on the railroads have either slowed down or will have to do so unless freight conditions become nearly normal almost immediately.

Effective May 1, the manufacturers of common brick in this section decided to increase the price $2 per thousand to $19,50, delivered in the closest zone in San Francisco. At the same time cement was increased 25 cents a barrel to $3.88 for carload lots and $4.25 for less than carload lots. Lime was advanced 10 cents per 180-pound barrel from $2.90 to $3 in less than carload lots, and $2.50 in carload lots.

The advance in the price of bricks at this time was opposed by some of the prominent brick men on the ground that it will not be long before the railroads will advance rates, and a double advance in price would not be advisable. But the majority did not agree with this, and the price named is expected to take care of the expected advance in freight charges.

One of the important business changes which became effective on May 1 is the consolidation of the Builders' Exchange, the General Contractors' Association and the Building and Industries Association. These organizations were all working more or less along the same line, although each had some exclusive features. A good many men were members of all and the three bodies did not have the influence that a single compact body will have. The combined organization will go under the name of the Builders' Exchange.

The Los Angeles Pressed Brick Co. and the Simons Brick Co. must move their plants from Boyle avenue, between Seventh and Ninth streets, if the council adopts recommendations agreed upon by the Committee on Public Welfare. Residents of the district recently appeared before the committee and declared that the residents in the neighborhood of the brick plants had been fighting for years to compel these plants to move on account of the noise and smoke the brickmaking is said to create.

Balfour, Guthrie & Co. recently imported 145 tons or 50,000 fire bricks from Glasgow for some special work being done here.

The Forest Grove Brick and Tile Co. of Forest Grove, Ore., has been building a plant in that city which is expected to be in operation some time during the present month. The buildings have been completed and the machinery is being installed. The company will manufacture common brick, face brick, building blocks and tile.

The Ione Brick Co., at Ione, has been making some improvements at its plant, including a trestle which cut the distance which it is necessary to haul clay to the plant. This shortening up of the haul means a considerable economy in making the bricks and it should have the effect of maintaining output at the high level.

One of the most important brick and tile structures contracted for in California during the past month is a new high school building which is to be erected at Hanford, Cal. The building will be of brick and hollow tile construction throughout and will cost $350,000. The architects have almost completed detailed drawings and a contract for the erection of the building has been let to the Trewhitt-Shields Co. of Fresno. The work will be handled on lines similar to the Fresno school construction plan, of which the Trewhitt-Shields Co. has charge.

Brick is a popular material for school construction, sometimes used alone and sometimes in conjunction with concrete. A high school to be erected at Hughson calls for a brick building to cost in the neighborhood of $200,000. Bids have just been submitted for the building and taken under consideration.

Court houses and city halls are also being built of brick. The new Inyo county court house is to cost about $160,000. The building is to be concrete, faced with terra cotta. A building of similar material is to be erected as a city hall at Rainier, Ore., at an estimated cost of $25,000.

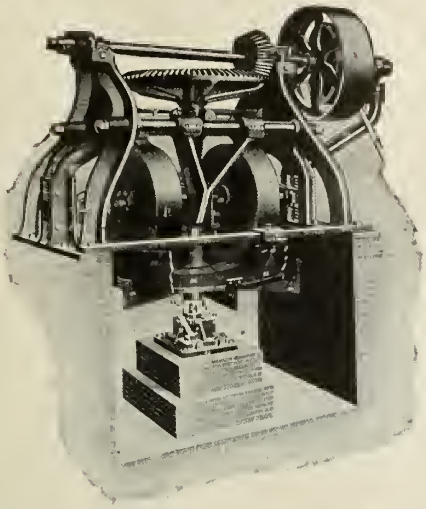
An architect has been instructed to draw plans for a high school for Piedmont, Cal., to be erected of fireproof material. Of what nature this material will be has not yet been specified. The high school district recently voted $250,000 in bonds to finance the new school. SUNSET.

San Francisco, Cal.

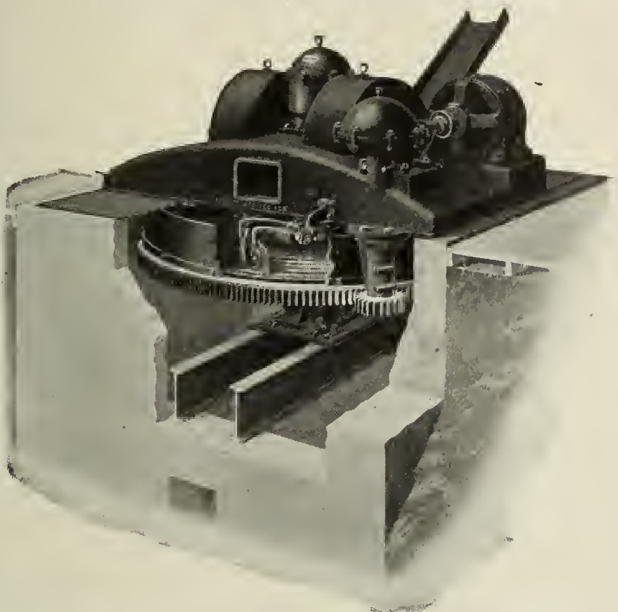
GOOD ROADS AND MOTOR TRUCKS.

The Bureau of Public Roads of the Department of Agriculture is conducting extensive experiments in determining the advantages of various road-making materials. One of the materials under test is brick. The coming into general use of the heavy motor truck has practically revolutionized the science of road building. Big new problems came when loads weighing 10 to 15 tons took the place of those of 2 to 4 tons. Roads built ten years ago were constructed before this fact could be realized, which is one of the reasons why many "permanent" roads have proved not to be permanent. One of the testing experiments being made involves the use of a 49-section roadway in the Arlington farm, owned by the Department of Agriculture. Each of the 49 sections was built of a different type of material, one of these being brick. Exactly the same use is given each section, so that eventually the type of construction best suited to heavy traffic will prove itself. The results of these tests of the brick section of the roadway will mean much for the brick industry, and are being awaited with considerable interest.

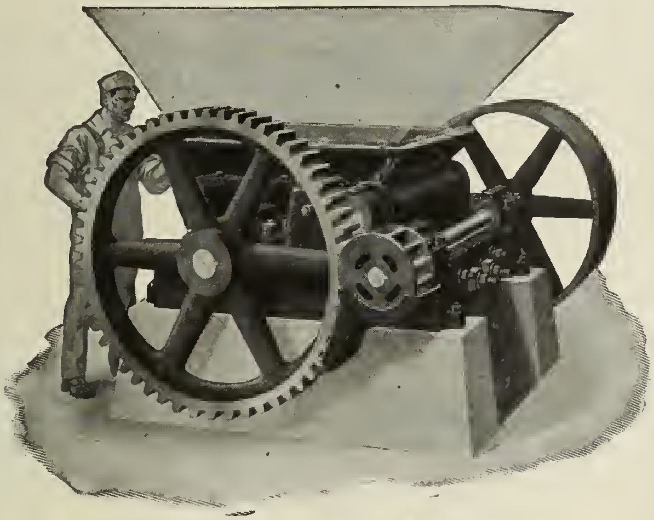
That cheap item in clay products known as the flower pot is a busy item of commerce during the autumn days, and the aggregate purchases of these mount up into a pretty tidy sum.



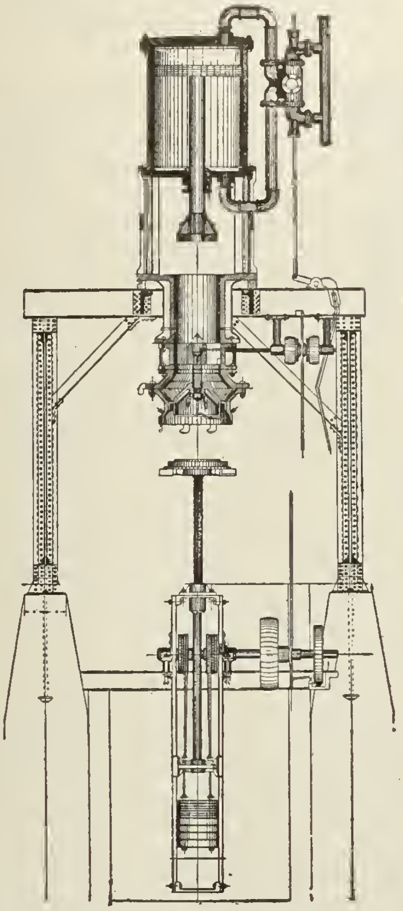
Standard Grinding Pans Made all Sizes



Model A-300 Step Bearing Type Dry and Semi Dry Grinding Pan



Single Roll Crusher



Sewer Pipe Press

Machines for
Crushing,
Grinding,
Pulverizing,
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Elevating and Conveying all kinds of Materials.

Steam Presses for Making Sewer Pipe, Drain Tile, Hollow Block, etc., are Manufactured by

THE STEVENSON CO.,

Gen'l Office and Works **Wellsville, Ohio**

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Monadnock Bldg., Chicago, Ill.

Written for Clay-Worker.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.

WITH THE COMING of more settled weather in the southern part of Indiana contractors and brick manufacturers express the opinion that building operations will take on new life and that this summer will witness a great deal more building than last year. Bad weather conditions during the past two months have retarded building operations to a certain extent in this section. Manufacturers in Evansville to the number of more than 100, including the Standard Brick Manufacturing Co., a few days ago issued a declaration of principles through the daily newspapers of Evansville, stating their opposition to the "closed shop," declaring it a menace and hardship on the working man who is not a member of any labor organization. The manufacturers declared that the "open shop" is the American plan, and this they will stand for at all times.

The first of May witnessed more activity in building lines in Evansville and several large buildings are being planned and quite a few are under construction at this time.

The building operations in Evansville for May are showing a gain over the previous month, and it is expected that June will show an increase over May. Work on the new factory of the Vulcan Plow Co. is progressing nicely and workmen are now engaged on the fourth floor of the building. The large five-story store building of the Van Pickerill Hardware Co., at the corner of Fourth and Sycamore streets, is nearly completed and will be occupied by the company within a short time. The contract has been let for the new bank building of the First National Bank at Mt. Carmel, Ill., and work will start on the building at once. Work is progressing nicely on the new hotel at Lawrenceville, Ill. There is considerable building reported at Tell City, Ind.; Boonville, Ind., and several other towns in southern Indiana. The Boonville Building and Loan Association at Boonville is assisting a good many people in the building of homes this summer. Building materials are firm in price and no material reduction is looked for this year.

Brick and tile manufacturers in southern Indiana, southern Illinois and western and northern Kentucky report that the switchmen's strike and the car shortage during the past month have greatly interfered with their operations. It had been hoped that the car shortage situation would improve with the passing of the railroads from government control back to the hands of the private owners, but instead of the situation getting better, it has grown worse, and little relief now is in sight. Some of the manufacturers also report that they are having trouble in getting first-class labor for their plants.

John Andres, secretary and treasurer of the Standard Brick Manufacturing Co., at Evansville, was out of the city several days recently. He says building operations are looking up and that he expects the demand for brick to continue good all season.

Many brick and tile manufacturers in southern Indiana, southern Illinois and western and northern Kentucky attended the good roads congress that was held at Evansville April 22d in conjunction with a meeting of the Dixie Bee Line Association, that proposes to build an improved highway from Danville, Ill., to Adams, Tenn., where it will connect with the Dixie Highway. The meeting was a most enthusiastic one and the main speaker at the gathering was Governor Charles H. Brough of Arkansas, who is the president of the National Good Roads Association H. M Clemens, head of a large sewer pipe manufacturing company at Cannelton, Ind., led a large delegation from that city. Cannelton sent the largest delegation of any city in the tri-state territory. Phil Langrebe, brick manufacturer at Huntingburg, Ind., was at the head of a large and enthusiastic delegation that came from that live city. One of the main things done at the meeting was the boosting of the proposition to build a bridge across the Ohio river at this place and another bridge across White river at Hazelton, Ind.

Pottery plants at Evansville are being operated steadily for the past several months and the spring trade has been unusually active.

Henry C. Kleymeyer, president of the Standard Brick Manufacturing Co., at Evansville, was asked the other day by one of the daily newspapers of that city what he was doing when he was 20 years old, and this was what he said: "I was earning less than $12 a week as a bookkeeper in the office of a brick manufacturing company at Henderson, Ky. Everybody worked for almost nothing then; that was why brick sold for $4 a thousand in those days. That was just before I came to Evansville and participated in the organization of the company of which I am the head." Mr. Kleymeyer is one of the most progressive business men of Evansville and stands high in financial and business circles of his adopted city.

The manufacturers of Paducah, Ky., joined hands a short time ago and declared that they were unalterably opposed to the "closed shop" and that under all circumstances they would stand for the "open shop," which, it was pointed out, was the best thing for American workingmen. Among the manufacturers who signed the resolutions were The Hill & Karnes Brick Co., Inc., and the Paducah Pottery Co., Inc.

The Best Brick Manufacturing Co. at Evansville, which was organized several months ago, reports that the outlook for the summer and fall trade is very good at this time.

A. HOOSIER.

HEARD IN NEW ENGLAND.

COMMON BRICK are selling for $27 in Boston. A decline of $3 since last month. This is the price for up and down brick delivered on the job. Supplies are apparently a shade larger, else the price would have remained steady at the higher range. A good deal of building is planned for this season, but the details have not yet been given out. The situation is not entirely satisfactory, however, because of the high cost of building materials, but most interests are hoping for improvement as the season opens.

Worcester is quoting $25 to $27, delivered on the job. Springfield. Mass., gets $25. Holyoke is asking $25 to $27. The price in Greenfield is $30, and these figures seem to hold good in most of the centers of the state.

In Connecticut building conditions are unchanged. Labor is scarce, but a great many houses are to be built, if the labor and material are available. New Haven is asking $27 for common brick. Hartford is getting $25, or a little more delivered. Bridgeport dealers want $25 to $27. Waterbury gets $30. Other centers are getting these or similar prices, and capacity is indicated in all producing points. Conditions at the plants are better than a year ago., but labor shortage promises to be an important factor in all the plants this season. Of demand no question exists. The situation is acute in some localities and not until the plants are in operation will it be possible to estimate what producers will do. Buildings are sadly needed, and probably every available brick will be used before the season ends.

HIRAM.

It is through organization that we can best fulfill our responsibilities and duties both to our country and to the industries in which we are engaged.

COME TO LANCASTER, PENNSYLVANIA.

SEE—the modern 50,000 daily capacity brick plant, soft mud sand molded process, that we are building for the LANCASTER BRICK COMPANY, INC.

MINING THE CLAY.

SEE—the Thew Automatic Electric Shovel in operation.

CLAY DELIVERY.

SEE—our two and one-half yard automatic end dump CLAY CARS, delivering the clay to our GRANULATOR.

CLAY PREPARING EQUIPMENT.

SEE—our heavy type GRANULATING CLAY FEEDER granulating the large lumps of clay, thoroughly mixing the clay in dry state as it comes from the clay bank and automatically feeding the crusher.

SEE—our big 24-inch COMPOUND DISINTEGRATOR and CRUSHER thoroughly disintegrate the clay and stone. This Crusher is the famous "Parry" design manufactured by us.

SEE—our steel frame CLAY DELIVERY CONVEYOR feeding the PUG MILL.

SEE—our heavy, all iron and steel PUG MILL directly connected to the BRICK MACHINE.

BRICK MAKING EQUIPMENT.

SEE—our 1920 model soft mud BRICK MACHINE with automatic self strike and automatic bumpers. A great big heavy powerful machine that will turn out the brick as fast as you want them, and stand up to the work.

DRYING EQUIPMENT.

SEE—the pallets of brick leaving the automatic dumping tables, and being automatically delivered to the two men in the Dryer who place the pallets of brick on the pipe rack shelves of our PIPE RACK DRYER, where they are dried tonight and set in the kiln tomorrow.

SEE—the splendid arrangement of our PIPE RACK DRYER building providing ideal working conditions for the men, and mechanically correct construction for the principles of drying.

SEE—the CAR SYSTEM taking the brick from the dryers to the kilns using labor that cannot physically handle a wheelbarrow.

SEE—the miscellaneous equipment furnished by us that completes the plant such as MOLD SANDERS, SAND GRINDER and SIFTER, TRANSFER CARS, KILN IRONS, ETC.

We have also designed and are now building a complete soft mud plant on the Hudson River, the Hackensack district, in Virginia and two large outfits in London, England.

We specialize exclusively on furnishing complete equipments for soft mud brick plants.

Our machinery is a development of the famous "Martin" machinery originated in 1858, and used successfully by brickmakers in every section of the country.

We carry a large stock of repair parts for the "Martin" machinery on hand at all times.

LANCASTER IRON WORKS, Inc.,

Lancaster, Pennsylvania.

Jas. P. Martin, Manager Clayworking Machinery Department.

New York Office,
501 Fifth Avenue.

Join the National Brick Manufacturers' Ass'n. Join the Common Brick Manufacturers' Ass'n.

"LUMBER AND FIRE."

Illustrative of the awakening of the newspapers and other periodicals throughout the country to the advantages of building for permanency and safety against fire, there appeared recently in the Louisville Courier-Journal the following editorial under the head of "Lumber and Fire":

"Lumber prices are to go up again, dealers say. The statement will not be doubted. And lumber now sells for about four times what it cost before the war. Yet there is a consolation in the probability that this most perishable and dangerous of building materials may get so costly that nobody will build frame houses.

"A few cities in America, Wilmington, Del., and Wilkes-Barre, Pa., among them, forbid by ordinance construction of wood buildings within their corporate limits. The enormous cost of fire insurance in America is due largely to the enormous number of wood buildings in town and country.

"It would lessen greatly our national cost of living is every building in every city, and every farm residence, were of material less combustible than wood. The fireproof residence is not institutional anywhere, if indeed one really fireproof residence exists, but the frame residence or building, with a roof of shingles, invites the wind-blown spark to make a conflagration.

"Lumber already is so cóstly that brick, stone and concrete recommend themselves as the truly economical materials. The cost of labor is a substantial part of the building cost, whether the labor of carpenters, stonemasons, bricklayers or concrete mixers. The labor cost is put once into a stone or brick or concrete building and a century passes without visible deterioration of the home or other building that was well constructed of lasting materials. If the material is good stone, ten centuries, or fifty centuries, may pass and leave it untouched by time in so far as its solidarity is concerned. The stone monuments of Egypt and China are older than history.

"Any frame residence twenty years old which has not been treated with a dozen coats of paint during its brief life looks older than the Taj Mahal, in India, which has stood 250 years, and paint and painters are costly.

"There is an inexhaustible supply of building stone in America, which, lasting qualities considered, suggests itself as being cheaper for permanent use than lumber at present and future prices.

"It would be a good thing for this country if wood for the exteriors of buildings should be abandoned in the country for more permanent materials and forbidden by ordinance in every city in the interest of a lower fire insurance rate. Lessened competition of construction with other wood-consuming enterprises would relieve the tension appreciably, and might leave enough wood at reasonable prices to serve where there is no satisfactory substitute.

"In no other country is wood for building used so generally as in America. In no other country are buildings so generally merely temporary shelter. In no other country are fires as frequent and fire insurance rates as high."

To The Clay-Worker the thought this awakens is that the brick men of the country have not lately been giving enough public expression to the merits of brick and clay products. Otherwise they would have been emphasized in the above editorial. It is a reminder that no matter how good the demand is, we should keep advertising clay products, keep them in the public mind, so that when building is in contemplation public thought will naturally turn to brick and hollow tile, and not go wandering around loosely among stones and various offerings in an indefinite manner.

As has been pointed out in these columns frequently of late, the time is very propitious for making a splendid impression on the public mind in favor of clay products, an impression which should last, because these products have merit in them, and not merely propaganda behind them. Let us keep the good work of boosting clay products going forward, keep putting up those build-with-brick signs, to the end that the world may be informed and the country may have better buildings, as well as the industry have better business.

CRESCENT
BELT
FASTENERS
MAKE GOOD
BELTS GIVE
BETTER
SERVICE

THEY DO-
AND MORE.

They insure Continuous Production

Write Dept. 12
Crescent Belt
Fastener Co.
381 Fourth Ave.
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They save time, labor & Belting

Financial Assistance Given

Clay Product Manufacturers who desire increased output or larger equipment. I have sold many Clay Product Company Bonds, and have a large clientele for this class of securities.

Correspondence Invited

FRANKLIN W. MORGAN
First National Bank Bldg. Chicago, Ill.

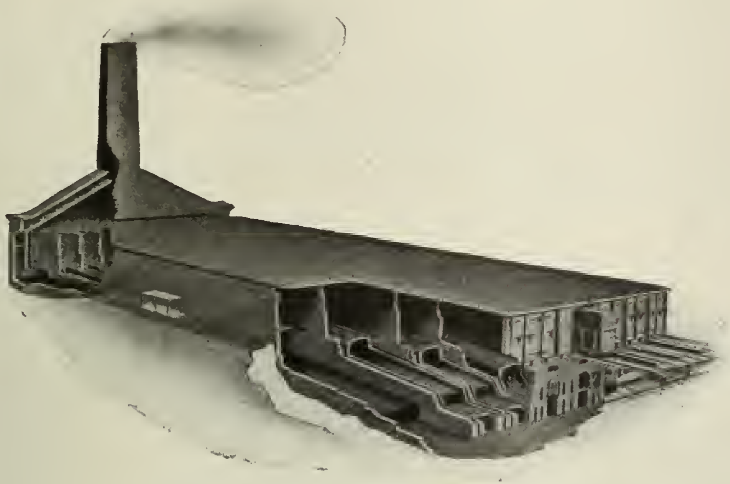
The Sensation of the Kiln World!

Henry Webster & Sons' Continuous Kilns

The Continuous Down Draft, a perfect down-draft kiln.
The Continuous Muffle, a perfect muffle kiln.
The Continuous Combination Kiln and Steam Generator, combining every phase of burning, for any class of goods, no matter what.
Patents granted and pending in United States of America, Great Britain, Canada and other countries.
Working models, plans, etc., can be seen by appointment at our offices, 628 Lexington Ave., Newport, Ky.
P. S.—Will be pleased to meet any experts in the trade and prove our assertions.

Henry Webster & Sons
Kiln and Drier Experts Consulting Engineers
NEWPORT, KENTUCKY

Improved Kilns and Dryers and Kiln Floors.



Wilson Hot Plate Radiatary Dryer.

For small plants the most efficient dryer now in use.

Easy to control and operate.

Hundreds of them now in satisfactory use.

We have improved kiln floor construction. Improve the product, save time and money.

Built by Brick and Clay Engineering Co.

Dryer Patented by Thos. M. Wilson.

March 3. 1903
August 10, 1910
May 12, 1912.

Brick plant equipped with electric power from clay bank to siding.

Brick and Clay Engineering Co. Kiln and Dryer improvements used throughout.

Considered by practical brick men to be one of the finest and best in The United States.

Capacity of above plant 100,000 per day.

Brick and Clay Engineering Co., Incorporated.

Thos. M. Wilson, Mgr. **Greensburg, Pa.**

POTTERY MAKING IN JAPAN.

(Continued from page 597.)

state, and they are piled up from the floor to the roof of the kilns.

The ware, as it comes from the first fire, is sufficiently burned to be entirely safe in handling, but can be easily broken between the thumb and finger. It is glazed in the ordinary way by dipping it in tubs of thin liquid glaze. The ware dries rapidly and is ready for the second fire after the bottoms and edges of the cups have been cleaned of glaze to prevent sticking.

Manufacture of Electrical Porcelain.

One of the newer developments in the pottery industry is the manufacture of electrical accessories in connection with the rapidly expanding electrical industry in Japan. The large high-tension insulators demanded by hydroelectric development are made both in large factories, such as the great Morimura plant at Nagoya, and also by small individual workshops (on subcontracts) in villages.

The large pole insulators are thrown on an ordinary wheel which usually is motor driven. When shaped they are passed to a second man who turns them to size with a tool. Finally they are carefully finished by hand before drying. They are glazed in the clay and fired once. One man carrying through all the processes will throw, turn, and finish 400 insulators in a day, for which he gets about 1.70 yen (including a rice stipend).

Smaller white porcelain goods, insulators, cleats, rosettes, etc., are for the most part manufactured in Japan in the households alongside of dolls and teapots. They are molded in plaster of Paris molds, with a lavish expenditure of time and energy, from clay purchased ready for working, and are then fired in community kilns. With practically no overhead, such small manufacturers are able to compete successfully with modern factories. In fact, one large establishment which put in an insulator factory has been undercut in price by the small independent potters to such an extent that it has almost ceased to do business. Prices at the factory in October, 1919, for various items were as follows: Two-piece ceiling rosette, 2½-inch screw thread, 7½ to 8½ sen (3¾ to 4¼ cents); cleats, 1.4 sen (0.7 cents) a pair; solid knob No. 5, 1.20 to 1.30 yen (60 to 65 cents) per 100 (an advance of 60 per cent. over 1918); solid knob No. 3, 2.50 yen ($1.25) per 100; split knobs, 1.60 yen (80 cents) per 100.

THE KANSAS IDEA.

The Kansas idea of prohibiting strikes by law and setting up a court of industrial relations to pass upon questions of differences between the man who works and the man who pays looks good at this writing. It will take time to demonstrate the feasibility of settling questions of industrial relations by a special court, but meantime most of us will readily agree that prohibiting strikes is a good thing, and that some means or other must be devised for settling so-called wage and labor questions. Governor Allen declares that the Kansas Industrial Court has already proven of greater benefit to labor than to any other class. Labor always suffers more from strikes than is gained, whether the strike ends successfully or otherwise, so that if viewed rationally the industrial court should be sustained and supported by organized labor, for it will put an end to the woeful waste and suffering incident to strikes. We urge the readers of The Clay-Worker to familiarize themselves with the Kansas Industrial Court and advocate similar statutes in their respective states.

Trautwein
DRYERS

ARE THE LAST WORD
IN SCIENTIFIC
CLAY PRODUCTS DRYING.

WASTE HEAT
STEAM (DIRECT OR INDIRECT)
RADIATION.

TRAUTWEIN DRYER AND
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Clay Works Engineers
608 So. Dearborn St.
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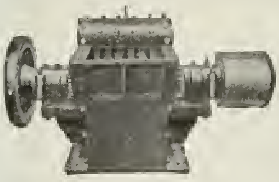
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are increasing production and reducing costs for hundreds of big operators.

Large or small pieces of clay, shale and other materials, dry or moist, are reduced to any degree of fineness, in one operation.

Their rugged strength, freedom from repairs, greater capacity per horsepower and economical operation, make Gruendler Crushers the most profitable machines you can buy.

Literature and full particulars will be sent upon request.

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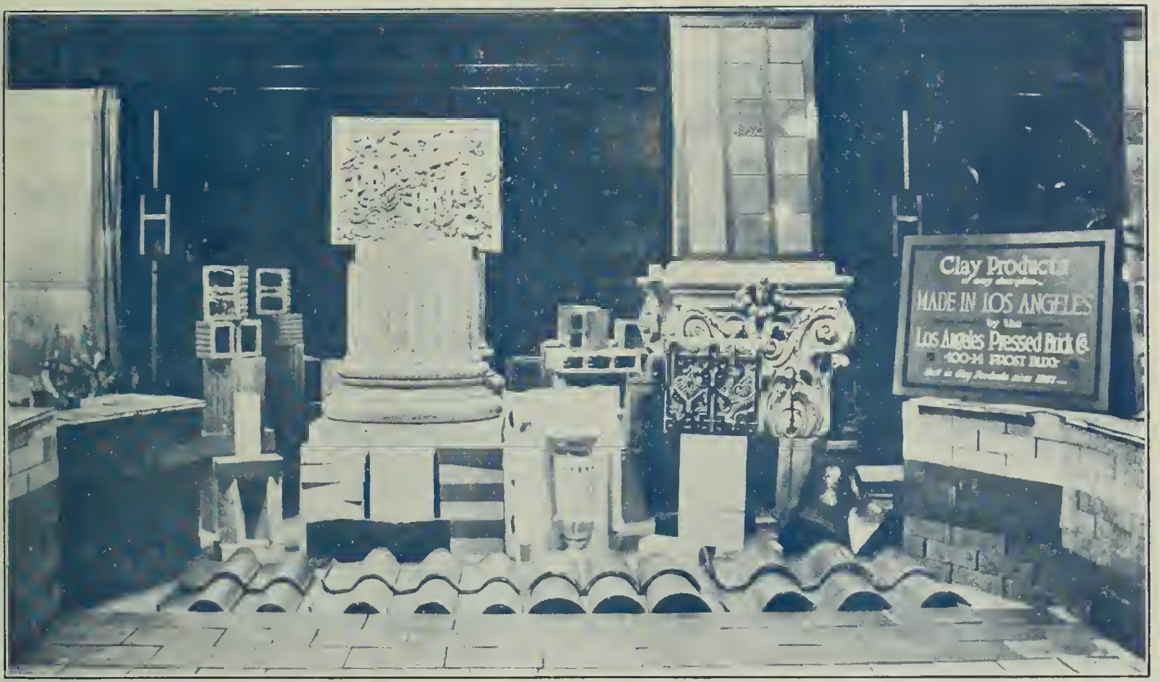
JUNE, 1920

THE CLAY-WORKER



CLAY PRODUCTS: Specimens of Ware Made in California by the Los Angeles Pressed Brick Company. See Page 695.

Published Monthly by
T. A. RANDALL & CO.
INDIANAPOLIS, IND.
OFFICIAL ORGAN OF THE N.B.M.A.

Published monthly. Subscription price, $2.00 per year. Entered as second class matter, January, 1884, at the post office at Indianapolis. under the act of March 3, 1879. Title registered and contents Copyrighted by T. A. Randall & Co., 1919.

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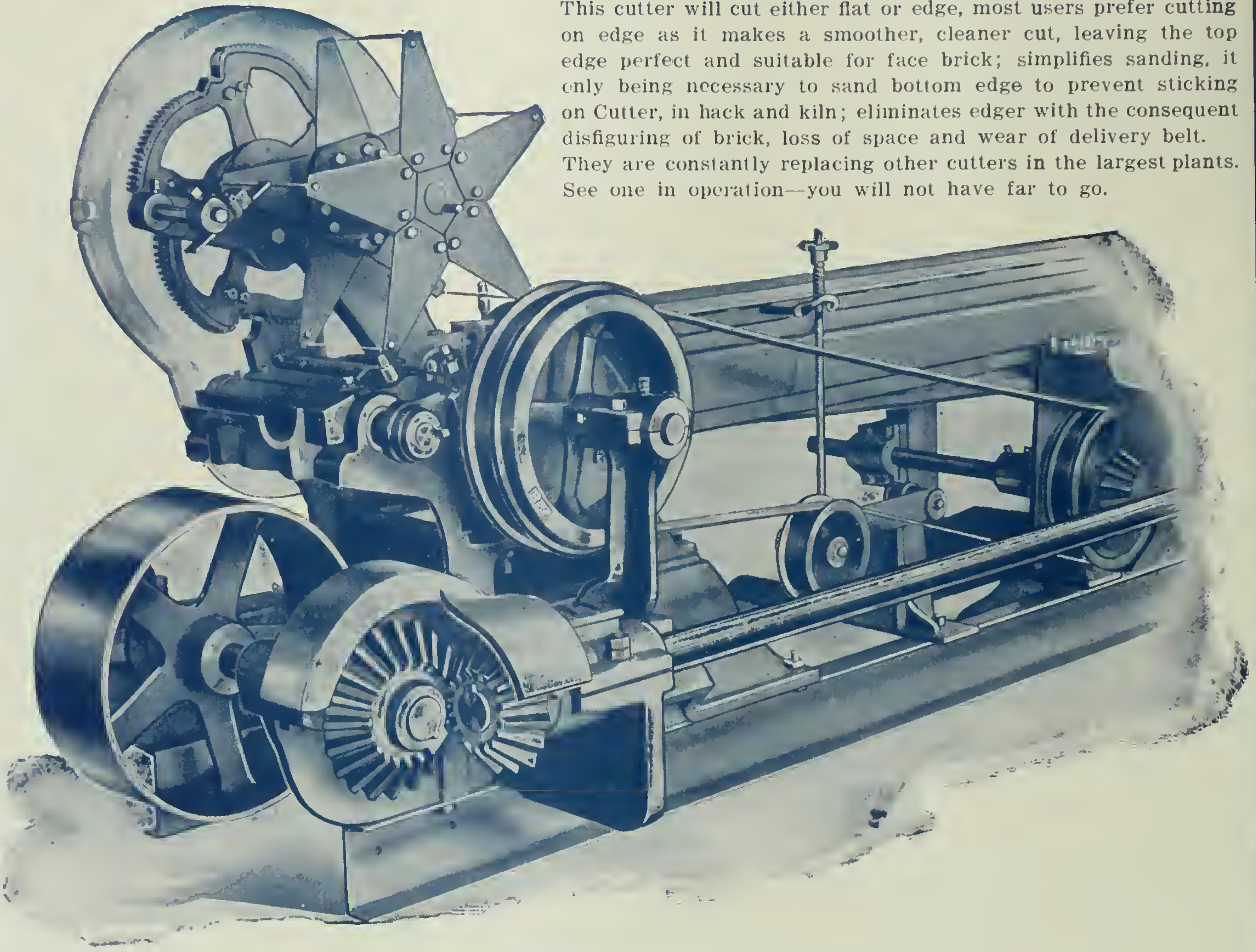
It Pays Well to Be On the Square,

Especially to Cut Your Brick Squarely

This is Exactly What the Steele Cutter Does and Continues to Do

This cutter will cut either flat or edge, most users prefer cutting on edge as it makes a smoother, cleaner cut, leaving the top edge perfect and suitable for face brick; simplifies sanding, it only being necessary to sand bottom edge to prevent sticking on Cutter, in hack and kiln; eliminates edger with the consequent disfiguring of brick, loss of space and wear of delivery belt. They are constantly replacing other cutters in the largest plants. See one in operation—you will not have far to go.



WHAT THEY SAY

Just a Few of Hundreds of the Same Kind We Have Received

W. E. DUNWODY, V. P., CHEROKEE BRICK CO., Macon, Ga.: "I think yours is the best cutter in existence. That is putting it about as strongly as I know how, and if you know any stronger way to put it, write me, and I will affix my signature."

BIBB BRICK CO., Macon, Ga.: "The two Rotary Automatic End Cutters installed for us about a year ago have given perfect satisfaction, and have not even required adjustment since putting them in. Our bricks are in much better shape than when we used the other cutters, cutting flatwise, the ends are always square, and bricks are not bruised as when we used edger. There is quite a saving in wires, as they do not break so frequently, cutting the narrow way."

SHREVEPORT BRICK & TILE CO., Shreveport, La.: "Your brickmaking outfit with feeder and car system, which we have operated three years has given perfect satisfaction. We really believe your cutter to be the best on the market."

Our Automatic Side Cutters Are Just as Good

J. C. STEELE & SONS **Statesville, No. Carolina**

CLAYWORKING MACHINERY

Western Representative: Geo. H. Smith, 3309 E. 37th St., Kansas City, Missouri
Northern Agents: The Manufacturers Equipment Co., Dayton, Ohio
Eastern Agents: Carter Engineering Co., 39 Cortlandt St., New York City

THE CLAY-WORKER

THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 73. INDIANAPOLIS, JUNE, 1920. No. 7

CLAY PRODUCTS: Brick, Tile and Pottery Manufacturers Play Conspicuous Part in Los Angeles Industrial Week Celebration in May.

A YEAR AGO, during the big industrial parade in Los Angeles, Calif., the hundreds of participants marched down the streets singing the official industrial song:

"Keep the smoke stacks smoking, every stoker stoking,
Now the boys are coming home work can't be slack.
Start new wheels ahumming, send new drummers drumming—
Turn your pockets inside out IT WILL ALL COME BACK."

How that promise was gloriously fulfilled was told in the huge parade of over 400 floats of the various industries that passed between densely packed curbs on Broadway and Spring streets, on Tuesday, May 18th, the second day of Los Angeles Industrial Week of 1920. Just what it meant, reduced to figures, was that Los Angeles has over 2,700 industrial establishments, which manufacture more than one thousand varieties of products. Also that in the last six months this city has manufactured articles valued at $618,000,000—an increase of 60 per cent. over that of 1918. It is no wonder that the faces of the thousands of boys and girls, men and women who rode or marched wore "the smile that won't come off," for it meant that never in the history of the country have the workers and manufacturers been so happy and prosperous.

Display of Garden Pottery Shown by Bullocks & Co. Los Angeles, Cal.

All of the larger stores devoted much space to exploiting local products sold by them, and not only that, but gave generously to manufacturers of lines foreign to their own.

Bullocks had a showing of garden pottery in an artistic setting. A carpet of green grass covered the floor, marked off with sandy paths. In the center was a stone bench on which was a green pottery flower bowl filled with California poppies. Close by was a stone column topped with a sun dial, upon which was perched a bird and a butterfly. At the other end was a large vase filled with palms and ferns, in front of which was a stone toadstool two feet high, over which, on slender wires, hovered a couple of brilliant butterflies, while on either side were vases filled with ferns and palms. A framed card advised that all of the pottery was "made in Los Angeles."

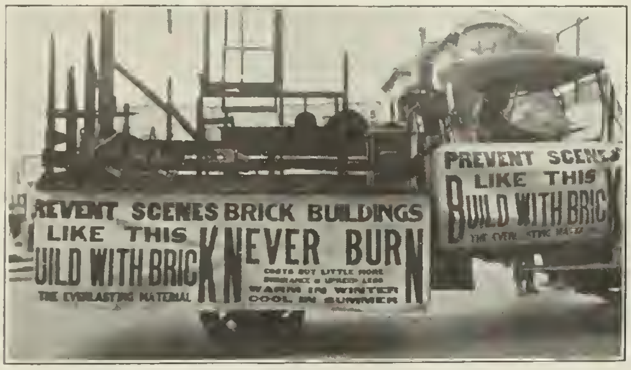
The Parmelee-Dohrmann Co. had a crowd constantly in front of their window, for here were shown a couple of potters at work, surrounded by complete equipments for making the jugs and vases. Down in front were a number of specimens of the completed product, with the card: "Made in Los Angeles by the Italian Terra Cotta Co." Here, too, were shown photos of the quarries from which the clay was secured. On the second floor of the store a class of high school girls from the art class of the Los Angeles High School gave demonstrations each day in the art molding and decorating pottery.

Hamburger's had a window devoted to a showing of the products of the Los Angeles Pressed Brick Co., including glazed brick, tiling and tinted ornamental clay decorations.

The second day of Industrial Week was made notable by a huge industrial pageant, four miles in length, headed by Gov. Stephens and Mayor Snyder, moving in nine divisions, and interspersed with twenty-six bands. In this the clay products industry showed up in splendid shape, there being a score or more of entries of local manufactories.

Especially interesting was the float of the J. A. Bauer Pottery Co., showing not only a good line of their products, but two potters at work, an entire vessel being moulded and shaped during the progress of the parade. They likewise had a beautiful exhibit of their art pottery in the window of Fowler Bros., leading stationers of the city.

Another float of much interest to the layman was that of the Southern California Clay Products Co., who showed a huge muriatic acid still, employed in the manufacture of their products. This concern also had a special exhibit of their own in a vacant building on Broadway, wherein were shown a wide range of their products, acid proof wear being especially featured.



Charred Ruins of a Frame House Offered as a Horrible Example by the Los Angeles Brick Manufacturers' Assn.

Example is better than precept, and the Brick Manufacturers' Association had a striking float showing the advantage of brick as a building material. They built a small frame house, and then burned it, leaving the blackened ruins standing. To the sides they tacked a long card:

PREVENT SCENES LIKE THIS—BUILD WITH BRICK
The Everlasting Material
Warm in winter Cool in summer
BRICK BUILDINGS NEVER BURN DOWN
Costs but little more Insurance and upkeep is less

The Alberhill Coal and Clay Co. had one of the big trucks loaded with clay, and hung with big canvas signs: "Alberhill Clay—A Factor in the Industrial Development of Southern California."

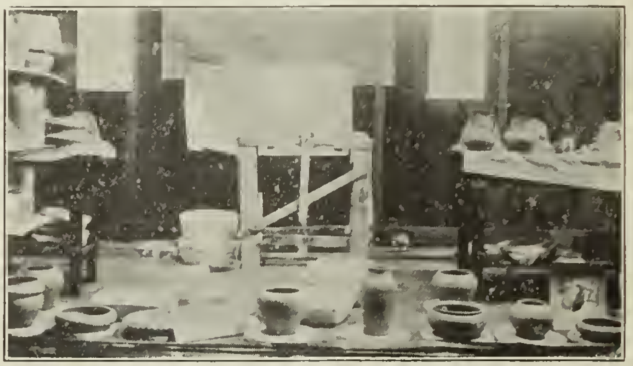
The Pacific Sewer Pipe Co. had four trucks decorated with bunting and garlands of greens, showing their products. One float showed slabs of glazed tiling, and the other many specimens of their vitrified glazed clay sewer pipe of several different sizes.

Among the other clay products firms having floats in the parade were Weaver Roofing Co.; Whiting-Mead Co.; Schalk Chemical Co.; National Chemical Co., and Mox Wrecking Co.

Wednesday was Harbor Day, at which time the delegates to the National Foreign Trade Convention, who were stopping at Los Angeles to view the sights en route home from the convention in San Francisco, were taken in special cars to San Pedro, where they were the guests for luncheon of the Chamber of Commerce of San Pedro, and later taken on a trip around the harbor.

The celebration of Industrial Week ended officially with the big luncheon given at the Alexandria on the 20th of May, to 500 representative business men of Los Angeles. The principal speaker was George E. Roberts, vice president of the National City Bank of New York, and former director general of the United States Mint, who spoke on "Relations of Foreign Trade to Industry." The luncheon closed with much enthusiasm and with the singing of the official song—"Los Angeles—Nature's Workshop"—the theme being the 1920 slogan of the Industrial Association, to the tune of "Yankee Doodle," and all expressed the determination to have next year show as important an increase in volume of home products as the past prosperous year has shown.

—William Bliss Stoddard.



Interesting Display of Parmelee-Dohrman Co. of Los Angeles-Made Pottery.

Attractive Float of the J. A. Bauer Pottery, Los Angeles, Cal.

THAT RAILWAY BILLION.

Recent estimates by railway authorities indicate the need among the railroads for another billion dollars in revenue in addition to what they are receiving. This is said to be essential to the upkeep and well being of the railroads. Moreover, it is being urged that this billion must be provided either through increased rates or by taxation and payment through the government or it will mean government ownership and operation of the railroads. This really leaves us but one choice, because there is not one man in a hundred now who wants either government ownership or any additional burden of government taxation. If that billion is to be raised the obvious answer is higher freight and passenger rates, so we might as well look forward to this and be prepared for it.

BELGIUM WANTS AMERICAN BRICK MACHINERY.

Alfred T. Marks.

INFORMATION reaching the United States Department of Commerce from its trade representatives in various parts of Belgium indicates that there is opening in that country a good market for United States brickmaking machinery. In the rehabilitation of that devastated country the operations of rebuilding are said to have reached that point where the demands for brick cannot be filled by either France or any other of the European countries. France has its own rebuilding problem, which calls for a far greater brick output than it is producing, or will produce for a long time, so that Belgium finds itself cut off from that usual supply source. The result of this is that it is obliged to manufacture its own brick.

Brickmaking in Belgium is no new industry. For many years the country has manufactured all of the brick for its domestic requirements, as well as a small surplus for export to other European countries. It has great stretches of brick clay lands easily accessible and producing clay of a good quality.

Vitrified Glazed Clay Pipe Made by the Pacific Sewer Pipe Company.

But the world-war did for Belgium what it did for northern France—not only destroyed its buildings, but practically wiped out its means for erecting new ones by ruining its brick plants and kilns and hopelessly dismantling its machinery.

As a result of these conditions, Belgium is today in far worse condition than is France—some parts of which were left intact—in that it has neither the brick nor the mechanical means for producing them.

The big need in Belgium today is for machinery for making common building brick, and equipment of all kinds for brick plants, and the field there at present is a most promising one for United States manufacturers of these lines.

One of the important advantages of installing our brickmaking machinery in Belgium at this time is that it will open a field for our export operations in these lines which will be practically permanent, as such future supplies and accessories for our machinery sent there now must of necessity come from the United States. Furthermore, it will prove an object lesson in modern methods which will mean much to our brick machinery builders, as demonstrating the superiority of our lines, so that it really gives us a foothold and an opening where we had no chance to gain these before. This will be all the more impressive to the Belgians, as well as to France and other European countries, when we remember that brickmaking by hand has for many years been something of an industry in itself in several of these countries.

Some inquiries for United States brick are also being received in this country from Belgium, but it is not believed to be feasible to attempt to supply these for the reason that transportation charges, under present ocean freight conditions, would so add to the delivered prices as to bring them up to almost prohibitive figures. This even if the transportation facilities could be had at all, which is more than doubtful.

It would seem to be the part of wisdom for our brick machinery manufacturers who are interested in exporting their product to carefully investigate the Belgium market without delay. American products today stand "ace-high" in that country, and anything bearing the "Made in U. S. A." mark finds a ready and waiting market there.

A NEW HOLLOW BRICK.

Alfred Nutting, clerk in the general American Consulate at London, England, tells in the Daily Commercial Reports of a brick that has recently been introduced in England which has some interesting features. One discouraging point about it from the point of The Clay-Worker is that it seems to be a cement brick.

This brick is made of one part cement and four parts sand, and of a size about five times that of an ordinary brick. The brick seems to be hollowed, yet presenting solid ends and sides, so that although it is five times as large as the ordinary brick it only weighs about as much as one ordinary brick.

One strong feature of economy claimed for it is in laying it up. Not only does its size facilitate rapid laying, but it is laid by dipping in a pasty mortar, which should simplify the work and reduce the skill required.

Section of MURIATIC ACID STILL
"MADE IN LOS ANGELES"
by SO. CAL. CLAY PRODUCTS Co
Mfrs of CHEMICAL STONEWARE

Acid Proof Tanks, Chemical Stoneware, Made by Southern Clay Products Company.

It is said this hollow block or brick can be made of clinkers or brick dust mixed with cement as well as from cement and sand. What would be more interesting to the average clayworker would be to see it made of clay in the usual way. However, we have a fair counterpart for it in the five-by-twelve face hollow building tile, which is showing interesting development in this country. The burned clay tile is a dependable product. The sand-cement block has never proven so in the past, so we are from Missouri and must be shown before being convinced that any such combination is a durable and dependable building material.

We are strong for that nation-wide campaign for building which we hear talked about, but we realize that it takes more than talk and brass-band hurrah to actually put such a thing over. We need some earnest study of the subject for more specific points to shout about.

COMMERCIAL VS. EDUCATIONAL ORGANIZATIONS OF BRICK MANUFACTURERS

THE ABOVE TERMS have been used a good deal of late and were repeated in my article in the April "Clay-Worker," but the latter term, "educational," is too broad, not specific enough to distinguish accurately the one class from the other. Both are educational, but along different lines. The commercial organization is largely concerned with the education of its members in cost accounting, selling methods, open prices and terms, as well as for united action on freight rates and shipping regulations. Another important object of the commercial organizatiton is the education of the public as to the virtues of brick—common brick, face brick, paving brick and hollow building tile—as a building material, for wall structures, for paving and for other construction purposes.

In our industry the commercial organization is a recent or later development and fills a long-felt want of the sales department or business end of brick manufacture and has accomplished much in placing the business on a higher plane and making it more profitable to investors. These organizations ought to accomplish much, for they cost a lot of money to maintain.

Educational vs. Commercial Organizations.

The so-called educational organization is concerned with the education of its members as to improved methods of manufacture, clay-winning, clay preparation, molding and pressing of the green product, drying, burning and the handling, storing and loading of the burnt product. The commercial organization is promoted and supported by the office end of the business, the educational, or let us say hereafter the manufacturing organization, is supported by the factory end of the business. The one concerns chiefly the sales department, the other the production department. The one is striving to create a larger demand for brick and other structural clay products, fairer competition, higher prices and less loss from credits. The other is striving to produce a better brick at less cost. The two purposes are obviously not antagonistic and the separate organizations should work in harmony, supporting each other, since the activities of both must lead to the same result, an increased use of brick.

When it comes to raising money to carry out the purposes of the organization, however, the office end naturally has it all over the factory end, being nearer to the directors and the bank account. In fact, the manager of the office is generally a director himself, while the factory manager or superintendent seldom is. Moreover, the average business man can more readily comprehend the advantage of an organization that has for its real, underlying object a higher selling price of the product than he can the advantage of an organization whose main purpose is the discussion of methods of manufacture and the scientific investigation of problems involved in the various processes. Therefore, he can be persuaded to appropriate hundreds or even thousands of dollars annually in an assessment per thousand brick, pro rated on sales, which he knows he can get back again by an agreement among all members to add the amount to the selling price, and refuse to allow the paltry sum of five dollars a year to maintain a manufacturing organization.

But we believe that if the matter were properly presented to him that he could not say no to a personal appeal. We believe that if a fund were available to send an organizer into every brickmaking section to explain the benefits to be derived from such an organization and from the sending of superintendents, head burners or ceramic engineers to its annual conventions, where the subjects discussed in sessions and lobbies pertain to chemical and mechanical problems involved in the manufacture of clay products, a large increase in membership would result.

The commercial organization that maintains permanent headquarters and has a high-salaried secretary spares no expense to secure a large membership, but the manufacturing organization must depend largely upon the voluntary efforts of its members and upon solicitation by mail, also upon friendly promotion of the journals representing our industry.

The above is given as an introduction to a further discussion of the "Passing of the Traditional Clay Convention," pronounced by our Chicago journal, and of the plan submitted by its editor for carrying on research work. We are pleased that answer was made to our question, as it gives us opportunity for further discussion and greater clarification that might otherwise have been neglected.

Research Work Only One of Many Important Matters.

In the first place, let me say that the carrying on of research work was only **one** reason for a larger manufacturing association, for an increased membership of the N. B. M. A. Whether this research work is conducted through a committee of the N. B. M. A. or through a committee of any other organization or through a "big central committee" of all the allied organizations, it will have my hearty support. But more of this later.

The point at issue now is, should the N. B. M. A. disband, demobilize, as is so much desired by the Chicago publication, or should all hands join in making it a larger and more efficient organization?

Is there no **raison d'etre** for a manufacturing association in the brick industry? It is almost an insult to the owners, managers and technical men engaged in the manufacture of structural clay products to ask such a question, but so much misinformation has been published by those who have a selfish interest in bringing the N. B. M. A. into disrepute, minimizing its influence and ultimately breaking it up, if possible, that there are many who, not familiar with the facts and the motive back of the propaganda, are led away from joining the association.

Now, we who are urging an active membership campaign this year are not doing this with any fear that the National Brick Manufacturers' Association is going to die or cease to be of value to the brickmaking industry, but because we believe that it should be of greater usefulness and influence and because we feel that, in justice to the grand men, of broad vision and altruistic purposes, who were the founders and loyal supporters of this association, many of whom have passed to their reward and whose memories we hold dear, and in appreciation of the good that the association has done us, the better knowledge of our art that it has given us and the friendships and acquaintanceships that it has brought us, some effort must be made to combat and counteract the deliberate, willful and unwarranted atttacks that have been made for many years by certain parties, for reasons that are selfish and personal and plainly ridiculous.

The Betterment of the Industry Deserves the Support of All.

And these are men, too, who ought to be friendly to every effort that has for its object the betterment of the industry in which they are interested. It is, at least, a short-sighted and narrow-minded policy that they have adopted. It cannot be that they want to deprive the men who really do the manufacturing, the men upon whom depends the advancement of the art of brickmaking, of an open forum for the discussion of the problems that are constantly arising, of the privileges of conventions at which they may meet those who are working along the same lines and with whom they may exchange ideas and form acquaintances and friendships that will be a life-long pleasure and gratification; where also they may meet the assembled manufacturers of clayworking machinery and controlling apparatus and the patentees of dryers and kilns and thus conveniently learn more of the latest developments in these lines than is possible through any printed matter. There is no place for such men in the business meetings of the commercial organizations.

The Ceramic Society covers many subjects in which these men are not interested and to many even the few papers that are now presented to their meetings, pertaining to their line of work, are too technical. The fact is that no association has ever been formed or is likely to be formed that can give so many advantages to the practical man engaged in the manufacture of brick as the N. B. M. A. When we use the term brick in connection with our association we include all kinds of brick and structural clay products, since the problems involved in all are practically identical and the advancement of one means the advancement of all.

Mere Fault Finding Retards Progress.

If these men think that the N. B. M. A. is not properly conducted, that the subjects of greatest interest to them are not given due share in the discussion, let them come into the association as a body and make their influence felt for betterment. No one pretends that the conventions are conducted in the best possible manner, but this is due to lack of interest and co-operation on the part of members and we have no one to blame but ourselves. If the membership was as large as it ought to be, sections could be formed of the different lines of brick manufacture, in the same manner as the American Ceramic Society has been obliged to do with its increased and diversified membership. We could have special, separate sessions devoted to common brick, to face brick, to paving brick, to fire brick and to hollow building tile.

Now, as to the research work that has been done by the N. B. M. A., the Chicago editor's plan is a good one if the different commercial organizations would make the appropriation, and they could do it if they would. This work could then be efficiently organized and much accomplished that is not now possible, but in such case the investigations should be planned and directed by a special committee of the Ceramic Society or of the National Brick Manufacturers' Association, or both, but it must be kept in mind that the men who are most vitally interested in the researches are, or ought to be, members of the N. B. M. A. In any case the results of the investigations should be presented to them for discussion.

The editor ridicules the small appropriation that the N. B. M. A. makes for this research work, and it is ridiculously small and not creditable to the brickmaking industry. No one feels this disgraceful condition more than we do, but the difference in our attitudes is this. we are trying to build up a large membership in the N. B. M. A., so that a larger sum will be available for the work, while the Chicago editor is, and has been for years, striving to reduce the membership and to discredit the work of the association. Hence, he is responsible to some extent for the small appropriation for research work. The insincerity of his position is obvious.

It ought to be an easy matter, with all hands joining, to so increase the membership of the N. B. M. A. that there could be appropriated annually, from even the small annual fee of $5.00, at least $5,000 for this research work and such a sum every year would accomplish much. If the dues could be raised to $10, double that amount could be used for research. It is far better to have a large number of manufacturers pay a small sum each year than to have a few pay a large sum. We want the whole industry to feel that they are having a part in this work.

We appeal to the Chicago editor and his associates to help us to build up the manufacturing organization and to cease their effort to tear it down, and we appeal to his advertisers, who have always been loyal to the association and who know the good that it has done and the immense possibilities for good in the future, to use their united influence to stop the antagonism of this publication.

Even those who have no definite knowledge of the work of the N. B. M. A.. likewise those who for any reason are opposing it, must admit that the association is doing **some** good and that no obstacle should be placed in the way of **any** effort to help our industry. If anyone will come out boldly and question the good that has been accomplished, we would be pleased to prove beyond the shadow of a doubt that the N. B. M. A. has done a grand work, that it is still functioning effectively for the good of the industry and merits the approval and support of every manufacturer of clay products.

W. D. RICHARDSON.

NO WOODEN HOUSES IN GREAT BRITAIN.

A while back there was quite a lot of newspaper talk about Great Britain turning to wood as a means for solving the housing problem in shorter time and at lower cost than if the usual method was followed of building with brick for permanency. Now there comes a report which indicates that this was mere talk, and that the people of the old country do not take kindly to flimsy or temporary building.

A recent consular report from England says that not much personal interest has been aroused in the subject of wooden building but there is being aroused interest in the modern type of American dwelling. It is pointed out in this report that the cost of building homes of the ordinary English style is now more than double what it was before the war and there is no likelihood of these prices coming down in the near future. In support of the claim for increased building cost a tabulation of current building material prices is given in which the best brick is now listed at $19.83 a thousand as compared to $8.88 just before the war.

There is incidental mention that the Leeds Corporation had decided to erect concrete houses, and these are various lines of relief suggested, but from a study of the reports, one is moved to the conclusion that the great era of wooden building prophesied for England will not materialize. What is more likely to happen is that the English builders will take on some of the modern ideas in American home architecture, modify them to suit their own notions and needs and **build in the main with brick** and other hard material because even with the present advance in price these are lower and cheaper in the long run than lumber at current prices.—The Builders' Guide.

The agricultural districts are not suffering from the high cost of living and should be able to build this year and should be persuaded to build with brick.

VERTICAL FIBER VITRIFIED BRICK PAVING.*

By Clark R. Mandigo, Consulting Engineer Western Paving Brick Manufacturers Association, Kansas City, Mo.

THE VERTICAL FIBER Type of Paving Brick was introduced by the Western Paving Brick Manufacturers' Association in 1912. At the present time, it composes 99 per cent. of the output of the manufacturers supplying the territory between the Mississippi Mountains and recently adopted as a standard by the National Paving Brick Manufacturers' Association. Very little has been published regarding this type of paving brick and practically nothing explaining the methods of manufacture. It may, therefore, be of interest to go more or less into the details of vitrified paving brick manufacture in order to set forth clearly the difference in the various types now in use. The speaker is in no sense a ceramic expert; the discussion which follows comes from a civil engineer and is very rudimentary.

Carl R. Mandigo, Kansas City, Mo.

In the early days, brick for paving were set on edge, probably to gain strength for the weak building brick used at that time. This became a habit with no thought of doing differently, and all that the manufacturers attempted to do was meet the requirements of municipal engineers. With the increase in the amount of paving, separate factories were established for the manufacture of paving brick, and vitrified brick, similar in shape and size to the building brick, came into use. Since there were, in the early days, no adequate or positive means for testing the wearing qualities of the paving brick, a great deal depended upon the factory where they were made and its reputation for turning out a satisfactory product.

The repress, which had been used to give a smooth, finished appearance to the brick and remove the ragged edges by rounding the corners, added the trade mark of makers' name to the product. As you know, all the early brick pavements used a sand filler for the joints, but at about the time that cement grout filler came into general use, some of the plants put out a larger sized paver called the brick block and added spacers or lugs to provide for a free flowing of the cement grout to the bottom of the joint. The repress was then called upon to form the lugs on the side of the block. This type of paver has been used extensively in nearly every section of the United States.

The introduction of the rattler test, which gave a positive means of comparing the quality of various brands of vitrified brick, its perfection by engineering schools, with the assistance of the manufacturers, and its gradual adoption by municipalities, gave a definite mark for the manufacturers to work to, and eliminated the personal equation to a large extent. Paving brick became a standard structural material like steel, cement or lumber and was required to meet certain definite tests regardless of its place of manufacture. The manufacturer who could not consistently make a paver up to standard soon went out of business.

Up to this time the paving brick makers had attempted only to meet the requirements of civil engineers and yet keep down the cost of production. The establishment of large plants specializing in one class of brick gave an opportunity to study the characteristics of the raw material and install machinery which would reduce costs and at the same time increase the output of No. 1 brick.

The repress caused considerable trouble, as the inspection of the finished product became more thorough, and it was found difficult to avoid laminations and at the same time repress the brick. Due to the fact that the repress box must be slightly larger than the wet clay block it is to receive, so that the latter may be dropped readily into it, the repress in effect expanded the block in two dimensions and decreased the third dimension. The result was a block which was slightly greater in volume than when it came from the cutter and one in which the structural features had been partially if not wholly changed, much to the detriment of the finished product. Improvements in grinding and tempering of the raw material and in the dies and their lubrication, as well as the perfection of the automatic wire cutter, made it possible for the manufacturer to turn out a very neat finished product without the repress and yet the specifications he operated under required repressing.

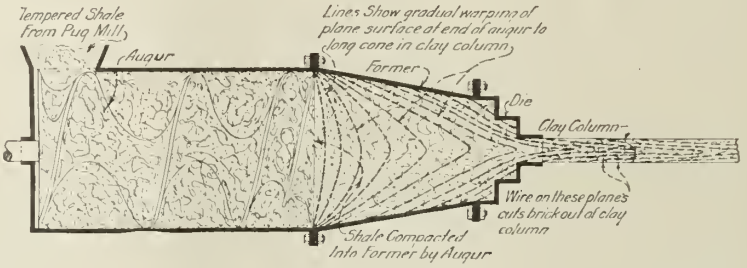

Tempered Shale From Pug Mill
Auger
Lines Show gradual warping of plane surface at end of augur to long cone in clay column
Former
Die
Clay Column
Wire on these planes cuts brick out of clay column
Shale Compacted Into Former by Augur

Fig. 1—Diagrammatic Sketch of Auger Machine Former and Die. Showing Cones Built up in Clay Column.

These facts were brought to the attention of engineers through a campaign of education carried on by the owner of a patented wire cutter which formed lugs on the brick in the process of cutting and which eliminated the repress. An improvement in quality and uniformly was noticeable and the wire-cut lug brick, non-repressed, has been used extensively, especially in the Eastern and Central States. Some of the more progressive manufacturers determined to take the initiative in the design of paving brick and offer such modifications in size and character of brick pavers as their investigations showed desirable, with the hope that if their efforts proved successful municipal engineers would not be slow in giving them their support. That their judgment was correct in this matter has been proved, and this has enabled them to cooperate with engineers in improving brick paving in all ways.

One of the most extensive series of experiments along these lines was started some ten years ago by a group of western manufacturers who engaged the ceramic expert, Claude E. Fuller of California, to make a thorough investigation of all phases of the manufacture of paving brick with a view to improving the finished product. Mr. Fuller selected the Buffalo paving brick plant in Kansas as offering the best facilities for his work and started in along lines which had been suggested to him in the construction of new plants and the design of clay machinery which he had supervised, as well as by his study of the requirements of a modern pavement. His investigations extended over a period of several years, but only a brief summary of some of the results obtained can be covered in this paper.

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*A paper presented at the last annual meeting of the American Society for Municipal Improvements.

Omitting reference to the chemical analysis of the shale, to the fineness of grinding, and to the amount of water needed in temepring, all of which, of course, affected the finished product, a brief description of some of the results of experimenting with the auger machine and die may be of especial interest. As you know, the shale or clay is ground in the dry pan to the necessary degree of fineness to develop the proper plasticity and yet not so fine as to cause checking or cracking in drying. It is then delivered to the pug mill or mixer where, by means of an auger in a trough, the amount of water to get a uniform product which can be properly worked is added and thoroughly incorporated. In general, the more the ground material is worked after the water has been added, the more plastic, uniform and reliable the brick. The tempered clay is then dropped into the auger machine, which is essentially a closed mixer or pug mill operating under pressure. A heavy shaft with a screw thread or worm turns in a heavy closed cylinder, open, however, on top at the rear to receive the clay and on its axis at the other end to receive the mouthpiece or die as an outlet.

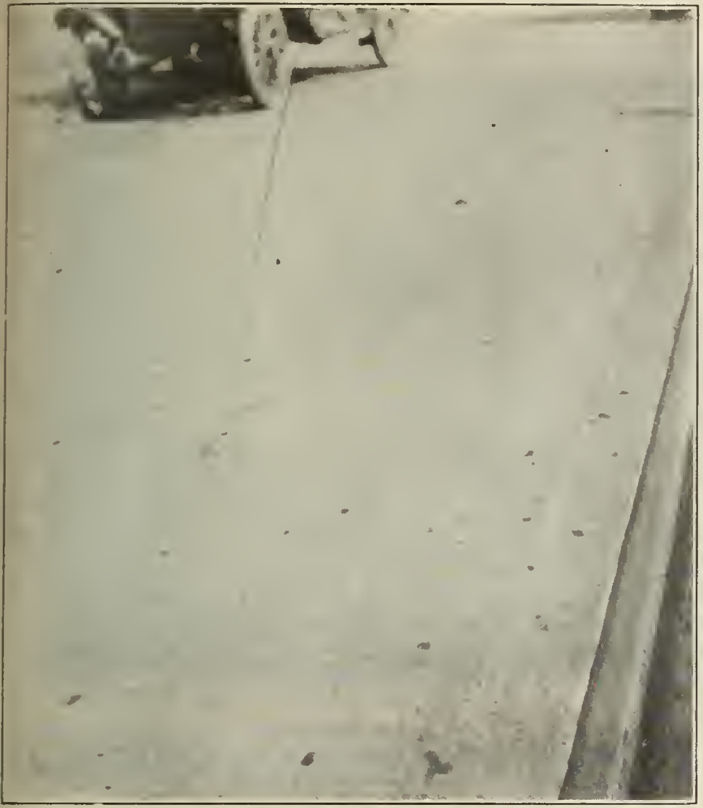


Fig. 2. 3-inch Vertical Fiber Brick Pavement Cement Grout Filler after Five Years Dense Business Traffic. Jennings Ave., Ft. Worth, Texas.

The action of the worm or auger gradually moves and compacts the tempered clay in the forward end of the cylinder. There a gradual reduction in cross section of the cylinder further increases the compression in the clay, which finally exudes through the die as a dense, compact, plastic column of rectangular cross section similar to the brick being manufactured. As much as 75 horsepower is sometimes used to drive the auger machine.

The transformation in the clay structure takes place in the forward part of the machine, especially in the tapering mouthpiece or "former" and in the die. The design of the shape and length of this "former" represents one of the most delicate problems in connection with brick making. The length of the taper depends on the clay, some clay taking a reduction in cross-section more rapidly than others, and also on the ratio between the cross-section of the auger barrel and the die. It must be designed to change the reduced-diameter clay cylinder at its forward end into a rectangular cross-section and, with the die, produce a clay column of uniform density and free from internal strains.

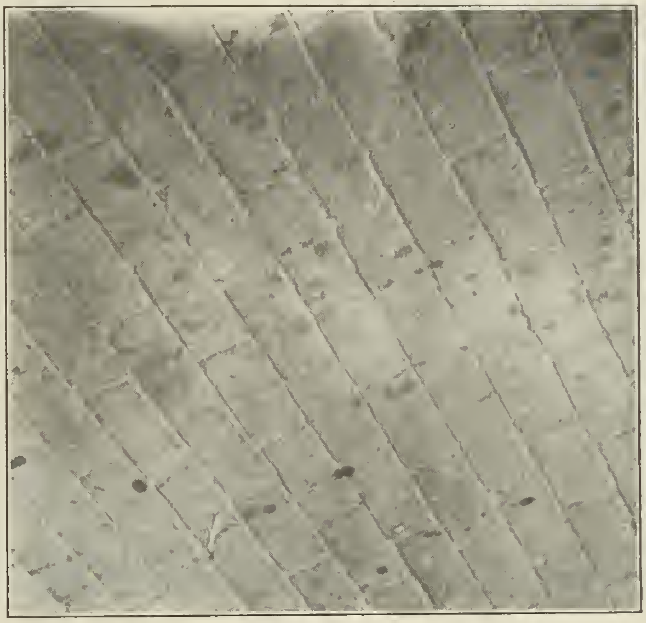


Fig. 3. 2¼-Inch Repressed Brick Laid Flat on Vertical Fiber Principle. Lee St., Greenville, Texas, after 13 Years' Service.

Now the auger, in packing and pushing the clay into the tapering former, must slip over, or trowel, the tempered shale. It builds up a series of spiral layers, each separated by the troweled surface of the clay. With poorly tempered shale or an improperly designed auger machine, the laminations in a wire-cut brick follow along these planes. Repressing sometimes sets up new lines of demarcation, but even in a repressed block you have no doubt noticed the circular form of the laminations.

Fuller in his experiments removed the former and die from an auger machine after it had been running and was full of clay, cut the clay cylinder at this point just forward of the end of the auger and gave the vertical cross-section a coat of colored paint. The parts were replaced, the machine was turned several times, and the painting process was repeated, using a different color. In this way a number of marked planes were established, vertical as they entered the former. By dissecting the clay column after it emerged from the die, he demonstrated that these vertical planes had become long superimposed cones whose axes lay along the horizontal axis of the clay column. Where the cones intersected the surface of the clay column, there appeared a smear of paint. The altitude of the cones varied from 4 to 8 feet depending on the length of the former and the amount of reduction in cross-section. He also found that the clay just in front of the auger could be dissected along the troweled surface of the spiral layers previously mentioned.

As another demonstration, after removing the former and cutting the clay cylinder Fuller imbedded various metal articles, such as the triangular zinc tabs used in glazing, with their smallest dimension horizontal. That is, they were pressed flat in various positions on the vertical cross-section of the clay cylinder. After these had been pushed through the former and die, they were found in the clay column with their greatest dimension parallel to the longitudinal axis of the clay column, and their smallest dimensions at right angles to it.

These results may be explained by considering the movement of the clay through the former. The friction of the clay along the sides of the former, as well as the reduction in cross-section, retards the movement of the outside of the cylinder. The center of this column travels, therefore, at a faster rate than the outside. The internal friction thus set up tends to arrange the particles of ground shale which are elongated or flakey with their longest dimension parallel to the axis of the clay column.

After leaving the cutter, the clay blocks are placed in the drier to remove most of the free moisture and then piled in the kiln. In speaking of vitrified brick it should be understood that the dictionary meaning of vitrification, "to render glassy"—does not strictly apply to commercial clay products. A glassy brick would be too brittle for paving purposes. In a commercial sense, vitrified means that "a chemical action has taken place so that the clay particles have coalesced and become fused by the action of heat, forming a new homogeneous whole, but not that fusion has been made completely by bringing the entire mass to a semi-fluid state." Vitrified brick may therefore be said to have been heated to incipient fusion. Burning the dried clay block to this temperature is, of course, what gives it the strength, toughness and durability to withstand street wear, but it does not rearrange the various particles of shale nor change the physical structure which we have seen was built up in the auger machine. The cones mentioned previously are fused together, but still form planes slightly weaker than the body of the brick. This internal structure of the brick can frequently be noticed in crushing a brick or in brick which have been shattered by expansion in the pavement.

These experiments naturally led to the conclusion, that to give the greatest wear resistance and strongest paving surface, the brick should be laid so that the cones forming the internal structure and the elongated particles of shale should be perpendicular to the pavement surface. The height of the die would then determine the width of the brick, and the spacing of the wires in the wire cutter would determine the depth of wearing surface, the reverse of the case in any other form of side-cut paving brick. For want of a better descriptive name, Vertical Fiber Vitrified Paving Brick was chosen to distinguish this form of brick from the others.

All forms of paving brick are piled on edge in the kiln so that the axes of the structural cones mentioned lie in a horizontal plane. The weight of the brick then presses the surfaces of the cones together except on the extreme ends of the brick and makes them more readily fused by heat. An attempt to burn pavers piled the other way in the kiln produced brick so badly laminated as to be worthless. In a certain brick plant in the West, piling on edge did not prevent the cones separating on ends of the brick where the surfaces were nearly vertical in the kiln, producing brick with weak and laminated ends. Mr. Fuller overcame this by using a die 13½ inches long and cutting off 2½ inches from each side of the clay column before it went to the cutter.

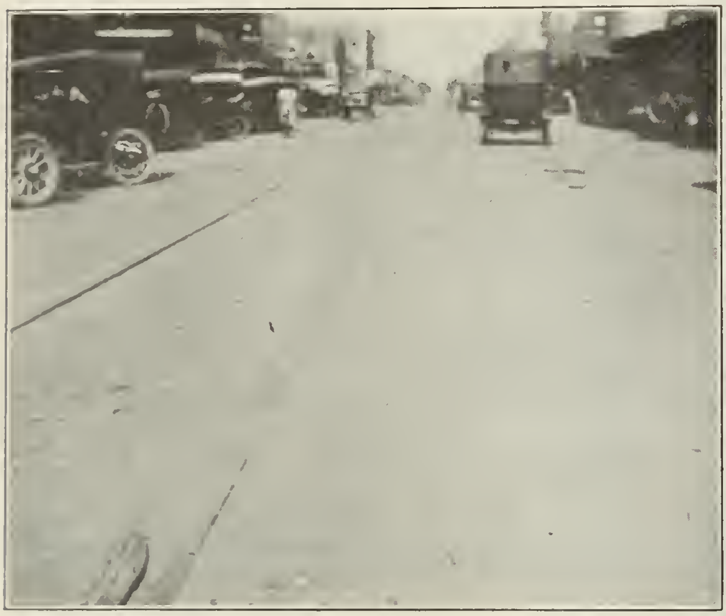


Fig. 4. Lee St., Greenville, Tex. First Pavement Laid on Principle of Vertical Fiber Brick.

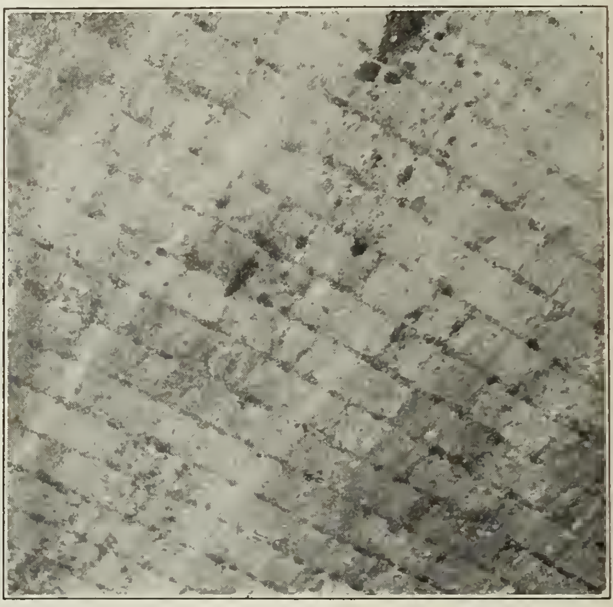


Fig. 5. Surface of 3-Inch Vertical Fiber Lug Brick Pavement with Asphalt Filler After Five Years' Heavy Traffic. Notice Asphalt Coming to Top of Joints in Hot Weather.

As a result of these investigations, the Vertical Fiber Vitrified Paving Brick was adopted as a standard by the Western Paving Brick Manufacturers Association in 1912. In this type of pavement the brick are laid flat with one wire-cut surface uppermost. The advantage gained by so laying the brick that the internal structural layers are vertical may be slight in a well manufactured brick compared with the importance of the other steps in the process of manufacture, but it represents an additional factor of safety in the pavement and illustrates one of the many technical details the modern paving-brick manufacturer is constantly working out. Moreover, there are many other advantages in this type of brick which make it a desirable form of paver, regardless of its internal structure.

The surface dimensions (4x8½ inches) make as large a unit as can be conveniently handled and, being larger than other forms, reduce the number of joints in the pavement. Vertical fiber brick can be made by any manufacturer with slight changes in his standard equipment. Since the spacing of the wires on the cutter determines the depth of the brick, the depth can be made any dimension desired and vertical fiber brick are actually manufactured in 2½-inch, 3-inch and 4-inch depths, of which the 3-inch depth brick, weighing about 8½ pounds, is the standard.

The depth of wearing surface can, therefore, be proportioned to the class and character of traffic on the street or road to be paved. In all other forms of paving brick, the height of the die determines the depth of the brick and it is not practical, even though desired, to make a brick less than, say, 3½ inches in depth. It is very difficult to force the clay through a long narrow die without having torn corners, lack of uniform density and twisting strains in the clay column. In vertical fiber paving brick, the reticulated wire-cut surface is not slick and does not get slimy, but offers a gritty, slightly roughened surface for rubber tires and horses. All surface edges of the brick being square, the joints are of the same width on all four sides throughout the depth. Lugs, if desired, are formed by grooves in the die and, with bulged ends, the width of the joints can be controlled and uniform spacing provided. Thirty-five to thirty-six vertical-fiber brick will lay a square yard, instead of the forty-three to forty-five required by the standard paving block, making a slight saving in all the items of manufacture, hauling, laying and joint filler. This form of brick is especially adapted to asphalt filler which, under present traffic conditions, is being used with such uniform success throughout the Middle West. Lastly, one of the chief advantages in using the vertical-fiber type of paving brick, comes from the fact that though piled on edge in the kiln, they are laid flat in the pavement, consequently all kiln marks and warps come in the joints and not in the surface of the pavement. The wire-cut surface remains a plane and the brick lay up much more evenly and smoother than is possible where the brick are set on edge. The photograph of Jennings avenue, in Ft. Worth (Fig. 2) shows a good example of the smoothness and evenness obtainable with 3-inch vertical-fiber brick. The pavement was five years old at the time the photograph was taken and the section shown is directly in front of the post office next to the street car rail. Jennings avenue is one of the main business section thoroughfares.

At the suggestion of the speaker the Western paving brick manufacturers began two years ago the making of vertical-fiber paving brick without lugs and recommended their use where asphalt filler was specified. This step was taken as the result of some special orders of lugless brick made for streets in Kansas City, Mo., in 1915 and 1916. Lugs on paving brick were intended for use with cement grout filler to give sufficient body to the grout and allow it to penetrate to the bottom of the joint. The joints in any form of block pavement are usually the places where the first signs of wear occur, and the tendency has been to make the joints as narrow as possible. The closer the blocks are set, the more support they lend one another, the less opportunity there is for broken corners and the smoother will be the wearing surface. Narrow joints are especially desirable where asphalt joint filler is used, as the brick will then receive the wear, leaving the filler to perform the functions of waterproofing the surface and providing a thin, adhesive, elastic cushion around each block. As a matter of fact, the slight kiln marks coming in the joints and the manner of laying, especially the setting of the brick in the cushion by the roller, usually provide more space than is necessary. The lugless brick have been used, therefore, very successfully with cement grout filler.

In Wichita, Kansas, lugless vertical-fiber brick with asphalt

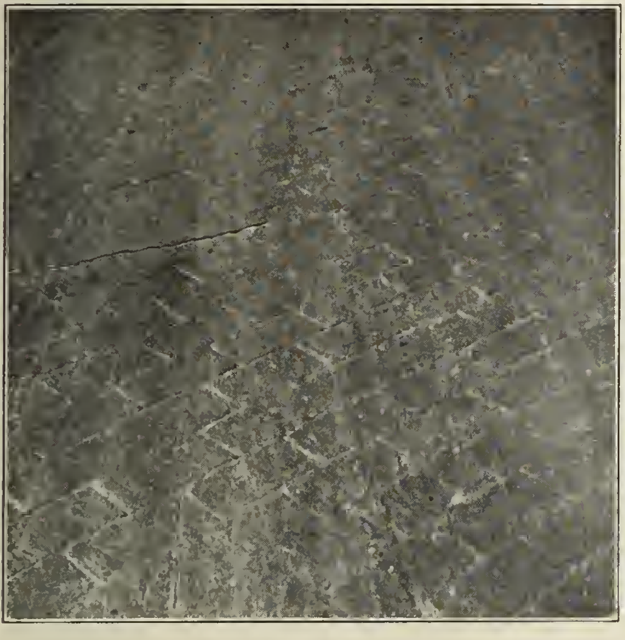


Fig. 6. Surface Vertical Fiber Brick Pavement with Asphalt Filler Under Dense Automobile Traffic, One Year Old. (Crack Is in Photo Film and Not in the Pavement.)

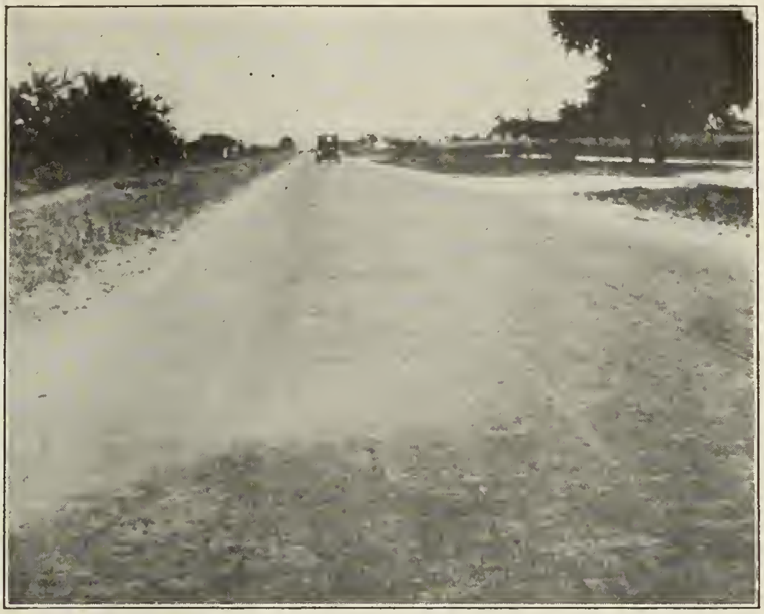


Fig. 7. 3-inch Vertical Fiber Brick Road Asphalt Filler after 3½ Years' Use.

filler have been laid on the streets for the past several years at an angle of 60 degrees to the curb, practically eliminating wear at the joints and still further improving the smoothness and riding qualities. Other cities are adopting the same method.

A Standard Size for Vertical Fiber Brick.

Although vertical-fiber brick can be manufactured in any depth desired, the 3-inch depth is the standard size and much the most economical to use. A thinner brick costs practically the same to make, handle and burn, while additional costs are added in these items where larger brick are made. In other words, the manufacturing cost per ton is the lowest for the 3 by 4 by 8½-inch brick. The standard size is also proving economical for all classes of streets and roads. Observation of vertical-fiber brick pavements in many towns and cities of the Middle West up to seven years of age, as well as laboratory tests, show that the 3-inch depth paver is amply strong enough to sustain the heaviest loads of modern traffic. The abrasive wear has been so slight as to indicate an indefinite life in this respect, while modern traffic makes this of even less importance. Fig. 3 is a photograph of the surface of the brick pavement on Lee street, Greenville, Texas, referred to in Mr. Duck's paper in the 1915 Proceedings of this Society. The photograph was taken in July of this year and shows a fair sample of the surface about 6 feet from the street car rail where the travel is heaviest. This pavement was laid in 1906 and is the first one we have a record of, laid on the vertical fiber principle. The brick, however, were the repressed brick size 2¼ by 4 by 8¼ inches laid flat on a plain sand cushion, with joints filled with cement grout. The concrete foundation is five inches thick and there are no expansion joints in the wearing surface. This 2¼-inch brick wearing surface has withstood the various classes of traffic the principal business street in a city of 20,000 population is subject to, for thirteen years without any expense for repairs and is in excellent condition at present. A careful inspection of the entire surface failed to disclose any serious defects nor any indication that this 2¼-inch depth brick was not carrying the loads as well as a 4-inch surface. In fact the Public Square which adjoins Lee street, and was paved at the same time with the same brick laid on edge does not look as good nor ride as easily as the pavement on Lee street where the brick were laid flat. A saving of 25 per cent. in the wearing surface over what has been considered the standard depth for brick—4 inches—is well worth making. Examination of the old 4-inch brick pavements, as well as of the 3-inch vertical-fiber brick pavements, leaves no doubt but that the thinner brick surface will be of sufficient strength and last as long as the 4-inch brick and at a considerable saving in first cost. As previously mentioned, the 3-inch brick is much the most economical size, costs the least per ton to manufacture, has been designated the standard, and is practically the only size used for streets carrying the heaviest traffic of cities or for country roads and residence streets. Other sizes are made on special order only, at an additional expense. Some cities, like Omaha, Neb., and St. Paul, Minn., are using the standard 3-inch brick set on edge where it is considered that a 4-inch wearing surface is necessary, avoiding specifying special sizes and simplifying pavement construction and repairs.

Advantages of Asphalt Filler.

While this paper is intended as a discussion on vertical-fiber paving brick rather than on vertical-fiber brick pavements, the asphalt joint-filler almost universally used at present with this type of brick has been so interwoven with the success of vertical fiber brick pavements, that at least a brief mention must be made of it. Four items affecting the pavement have contributed to the success of asphalt filler in brick pavements: (1) the method of application, (2) the shape and texture of the brick, (3) the quality of the filler, and (4) the changed character of traffic. Taking these items up in order, first, the bituminous filler is heated to a temperature below its flash point, is flushed over the surface of the brick pavement and squeegeed back and forth until the joints are full, leaving, necessarily, a slight surplus on the surface. It was impossible to get the joints properly filled by the old method of pouring-cans. No matter how carefully the work was done there was settlement of joints in hot weather. By flushing the hot asphalt over the brick a saving in labor is effected which more than offsets the slight additional amount of filler used. A coating of sand on the surface of the filled brick absorbs the surplus and, working into the asphalt, makes a good mastic.

In the second place, the wire-cut surface of the vertical-fiber brick which is uppermost in the pavement aids in retaining the thin asphalt mastic on the surface so that it doesn't scale off causing a dirty street. Without lugs the brick set up close and the square edges give a minimum width, even joint at the surface. The asphalt retained on the surface is only an incident to the proper filling of the joints and is not designed to be maintained. It remains, however, from three to five years and during that time acts as a reservoir for filling joints that settle, so that by the time it has worn off, all joints are packed tight with a solid asphaltic mastic. Fig. 5 shows the appearance of such a surface five years old. The dark spots on the joints, in the picture, are caused by the asphalt coming to the surface in hot weather so that the mastic filler is enlivened and renewed from the bottom of the joint. The brick in this pavement have lugs making the joints wider than in the lugless pavements.

In the third place, only the best quality of asphaltic cement is recommended as a filler, as this has proven to be the least susceptible to changes in temperature, possesses a long life, great adhesiveness, elasticity and malleability, and resists wear and rubber-tire suction. A grade of asphalt cement of about the consistency and requirements that would be specified in the best sheet asphalt pavements for an asphaltic base manufactured asphaltic cement has proven very satisfactory. Refined tar has been used in some instances, but does not at present seem to fill all the requirements.

Change in Traffic Conditions.

In the fourth place, the preponderance of rubber-tired traffic on the modern pavement has practically eliminated maintenance of joints where soft filler has been used. When asphalt filler began to be used some eight to ten years ago, it was expected that the joints would require refilling on dense traffic streets every five to seven years, but the changed traffic conditions, which have practically eliminated the horse-drawn, steel-tired vehicle and substituted the rubber-tired automobile and truck, have not made this necessary. In fact, the droppings of oil and kneading action of the tires seem to keep the filler alive and prevent any signs of disintegration, or working out of the top of the joints.

The advantages of this type of street or road surfacing may be briefly summarized as follows: (1) The street or road may be opened for traffic as soon as the filler has been applied. (2) Service cuts and openings are easily and simply repaired. (3) It carries the minimum risk in construction, since serious defects do not result through careless workmanship, lax inspection, or ignorance,—a real advantage in these days of inefficient labor. (4) The steps in construction are simple, all material being tested before being incorporated in the pavement and an opportunity given to correct any mistakes by the following step. (5) The filler is easily manipulated, and not subject to damage by frost, rain or premature traffic. (6) Noise is eliminated. (7) It provides an ideal, non-skid, smooth riding surface for automobiles and gives a good grip for auto tires and horses on all grades. (8) Expansion and construction are properly and effectively cared for. (9) The elastic filler cushions the brick and the foundation from shock and impact, reducing the thickness of base required and allowing slight readjustments between individual brick under traffic so that each brick remains solidly bedded in the sand cushion—there is no necessity for a cement-mortar cushion. (10) The wearing surface, being semi-flexible, adjusts itself to slight changes in foundation conditions without damage, and to deflections in less rigid types of bases than concrete.

Much could be said in regard to the various details of construction, but as these are simply a matter of good engineering practice and constitute a wide field, they will not be considered in the present paper, with the hope that they may be more fully covered than is possible in this paper by other speakers on city pavement construction.

Written for The Clay-Worker.

CINCINNATI BRICK AND BUILDING NEWS.

THE BUILDING INDUSTRY has not been very active here for the spring months. There have been several handicaps, and one of the more serious was the carpenters' strike. This naturally held up a number of large and small jobs, and when this was finally settled, doubtless a number of prospective building projects were given up. Then the high cost of materials and the difficulty in obtaining shipments, the extra cost of labor, all have had a share in keeping the prospective building people from taking the active part that would naturally expect to be noted.

There has been a great deal of unsettled weather here, and of course this has held up work, so that it would appear that the tide has been rather against the material men, so that the reports now indicate that instead of showing any decided betterment, there will be a falling off. At least that is the opinion held and the remainder of the spring and the summer does not offer as much hope as could be counted on. It is true that there are a fair number of homes being builded, and theaters and factory work is being given a more decided impetus here, but there is not the same vim that would be so welcome these times, and the movement is slow for anything like a normal call for materials now.

There is one other factor here that has hurt the building trade and that is the strike of the hod carriers. The continuation of this has been sufficient to hold up many jobs and the consequence is that the work that might be undertaken is given a set back. There would be a much better demand for brick if the labor questions were not interfering with the regular routine.

The common brick demand has been fair, all things considered, and the plants here seem to be busy, judging from the number of brick that are being turned out daily by these establishments. The movement is slow, however, on account of the difficulty in being able to lay the brick, and this makes the local situation bad. On this account, and the fact that the transportation system is still somewhat tied up, there is not nearly so much progress being made with the material men. The future is naturally a little uncertain at this writing.

The call for face brick, tile, sewer pipe and various lines of burned clay is only fair. In fact the reports do not indicate there is more than a fair demand, and nothing nearly so active as it should be at this season of the year. The entire clay industry has been hit by the high cost and labor and transportation ailments.

There has been some consideration of the matter of brickwork, the matter having been discussed at a meeting of the Joint Arbitration Board of brick contractors and the Union. There seems to be a desire to restore production to pre-war conditions.

Walter McGarvey, a brick contractor, has been appointed a member of the Safety Code Committee of the Industrial Commission of Ohio. It will provide regulations for safeguarding the lives of men engaged in all branches of the building industry in the state. It is said that these rules will likely be made a part of the state's building code.

A new theater is to be builded at the northwest corner of Seventh and Walnut streets, on the site of the former home of the Y. M. C. A., and some additional property on Seventh street. It will be a twin or double theater, and the smaller building will be financed by Mrs. George B. Cox, widow of a prominent political leader here. The theater will be controlled by the Shubert Theatrical Co., which purchased the property at the corner. One building will seat 2,000 persons and the other 1,200. It is said that the buildings will cost about $1,500,000. Work of tearing down the old buildings is to be undertaken in a very short time. The plans have not as yet been fully worked out.

It has been determined finally by the Keith's theatrical interest to cling to the original idea of building a five story structure on Walnut street, opposite the postoffice, to be a combined theater and office building. Plans for the building will be ready very shortly, so that work can be started before long. The idea later was to build a twelve story structure, but this was abandoned.

The Western and Southern Life Insurance Co., will soon go ahead with its additional space to be added to the present building at the northeast corner of Fourth and Broadway. The old buildings are to be wrecked soon. The plans are for a four story, fire-proof building of brick construction. Later another section of the same height and 54x78 feet will be builded.

The Cincinnati Real Estate and Building Co., will build a duplex apartment on the west side of Carthage ave., near Woolper ave., Clifton, for Edward Kirsch, to cost $13,500. It will be of brick.

James Gilmore, architect, has prepared plans for a residence for E. B. Ulrich, to be on Erie ave., opposite the Hyde Park Country Club. It will be of brick and stone trimmings, 77.3x31.8 feet, two stories of 12 rooms. It will have some novel features.

Judge John W. Peck, of the United States District Court, has granted the motion of the defendant in the suit of the Portsmouth Refractories Co., vs. the Harbison-Walker Refractories Co., for a stay of judgment rendered in this case pending an appeal to the United States Circuit Court of Appeals. In this case the plaintiff sought an injunction to restrain the defendant from operating clay mines over its coal mines in Scioto County, Ohio, on the ground that surface water seeped through into the coal mines and interfered with operations.

The report with the Cincinnati Clay Products and Supply Co., is that business has been seriously interfered with on account of the various labor troubles, and the difficulties met with in the matter of transportation. The building situation has been materially interfered with and that as a consequence the business is not as good as might be the case. The company is working at its common brick plants.

The Evans Builders Co. say that the demand for clay products is rather slow now.

The Purcell Brick Co. note that while freight movements have been better of late, the demand for brick is less active and the outlook not very hopeful.

The E. F. Grand Brick Co. has nothing very new to say, the demand for brick being slow at this time, and the outlook not very promising.

The D. C. Shorey Brick Co. report that the demand for face brick has been rather active of late, business being good.

—CINCY.

SOME TILE PROBLEMS OF THE ARCHITECT.*

By D. Knickerbacker Boyd, Consulting Architect, Associated Tile Manufacturers.

THE MEMBERS of the Tile & Mantel Contractors' Association of America are the instrumentality through which tile has been kept before architects and the public in general through good craftsmanship. But that some tile work has not been properly set or has been inappropriately used—undoubtedly by contractors other than members of this organization—has constituted one of the problems of the architect.

This problem will be largely eliminated when the standard or basic specifications being developed by the Associated Tile Manufacturers are put into general use. With such specifications, you contractors will be afforded a dependable basis upon which to estimate under conditions equable to all.

But architects have other and greater tile problems; what has surprised me is the number of architects who have said "We have no tile problems." When I say, "Tell me how you have overcome the problems," they reply, "We don't use tile."

And there, gentlemen, is the crux of the whole matter. They have told me that information is either so difficult to obtain or else so confusing that after exhausting their own patience, and perhaps that of one or more manufacturers or contractors, they give up the idea of using tiles for floors and walls.

Architect's Hardest Tile Problem.

So I say that the greatest of the tile problems of the architect is to secure complete and authentic information concerning (1) the characteristics of each kind of tiles, (2) usual, or "regular" sizes and shapes, (3) colors and surface finishes, (4) gradings or classifications, and (5) appropriate uses and best practice in setting.

You will, I feel, readily agree with me that it would be a physical impossibility for each architect, by personal inspection, to acquire this information about tile, which is but one of the many materials and processes with which, were he to attempt it, he would have to familiarize himself. To do this would leave no time for planning and designing, which are the essentials of his calling. Therefore the industry must prepare and sponsor this basic information and furnish it in readily available form.

I count myself fortunate in observing for other architects the processes of manufacture, and in translating for the benefit of all architects and all users of tile the information which I thus obtain in co-operation with the industry.

Let us begin by clearing up the mystery which has surrounded the grading of tile by having it thoroughly understood that the three grades, in white glazed wall tiles, are not the result of any intent of the manufacturer to produce different qualities. It is surprising how many architects and others do not realize that tiles are not manufactured in predetermined grades and qualities, but that the grades result from the selection made in the product which the manufacturer has tried with all the materials and forces at his command so to make and burn as to produce but one grade, the highest quality obtainable.

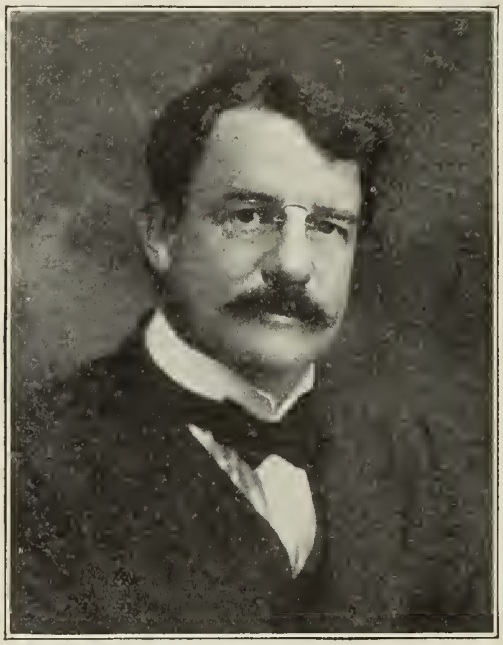
Architects and their clients, and in fact all users of tile, must be informed that, due to limitations and firing conditions, certain variations in shades, sizes, etc., are inherent in the manufacture of clay products.

Helpful Classification.

The recent adoption by the manufacturers of the classification "selected," "standard," and "commercial" will go a long way to help us all to secure the tiles intended. In the past even a person of limited means has objected to the term "second quality," when as a matter of fact the tiles heretofore designated by that unfortunate name were most suitable for him.

On the other hand, it would be equally unfortunate to specify for such a building first quality tiles only, free from all blemishes and defects, yet such has been a very general practice due to lack of knowledge.

Happily this condition will be improved when proper informative data are in the hands of architects and when they all specify the association certificate of grade, and you contractors insist that whoever furnishes the tile shall also furnish that certificate—to protect the owner, the architect, and yourself from imposition. Mr. Walker, one of the best friends and best fighters that any man can meet, will tell you all about this new form of certificate and how its use is to be incorporated in the basic specifications now under way. He will also tell you about the standardization work which is nearing completion and will ask your views on the elimination of shapers and patterns for caps, bases, and other trimmers, and for standardizing no others, such as cove and corner bead radii—all very important from every viewpoint. Architects who have been consulted on this work speak most highly of its value.



D. Knickerbacker Boyd, Philadelphia, Pa.

I am sure, too, that almost all architects, if they knew of the great amount of time which is spent on the mere "shading" of glazed wall tiles, would feel as those do to whom I have made the fact known, that every encouragement should be given to the use of "run of kiln" tiles, so far as color is concerned.

The time and effort now spent on shading could thus be given to more creative effort—an end most devoutly to be sought in these days of labor shortage. And in the opinion of many of us the result would be much more satisfactory from the point of appearance alone, removing at the same time much of the mechanical effect obtained when all tiles are uniformly white.

Would Change Some Names.

It is very important, it seems to me, that some simplification of tiles and names be considered to make them more significant of characteristics, colors, and proper uses. There are now too many names for kinds. With fewer basic names, no matter how many trade names might be given by manufacturers, this part of the architect's problem would be solved.

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*Paper read before meeting of Associated Tile Manufacturers.

Take for instance vitreous and semi-vitreous as words to conjure with. In most instances the same kind of tile is either vitreous or semi-vitreous, but none seem to know the relative difference in hardness, absorption, or reasonable appropriateness for exposure or use as between them; and few know that the only reason why a semi-vitreous tile is not vitreous is that the nature of the materials used to produce certain colors (red, brown, chocolate, and black) is such that it is impossible to burn them to the same degree of hardness without destroying not only the color but the body of the tile as well. It is very simple once it is known.

But take the same vitreous and semi-vitreous and consider them from the standpoint of size, and it appears that if the size is smaller than 1¼ inch, the tiles are known as ceramic mosaic. Between that size and 3 inches the same kind of tile is known as floor tile. From that size up to 6 inches if the tiles are vitreous they are known as flint tile, but if semi-vitreous they are known as floor tile. And all the while we have with us the quarry tile in sizes both under and over 6 inches, and all semi-vitreous.

Surely it is up to the industry and the tile contractor to make all simplifications possible, and to put out this information for the benefit of architects and users. Through co-operation we will surely accomplish great results in that direction, but let me say that in the meantime it is my belief that these complications and lack of information have deprived architects of the opportunity to take fullest advantage of tile, through the erroneous impression that but three general classes of tile were available and only the first named two in "regular" colors and but few standard sizes, namely:

White tiles for bathrooms, toilet rooms, lunch rooms, barber shops, drug stores, etc., in bright and dull glazes and not in small sizes, for walls; unglazed or vitreous tiles, not in large sizes, for floors—and the latter, when not white, furnished in fixed atrocious combinations of pattern and color;

Quarry tiles and light or plain colored unglazed tiles for floors, and

Faience or decorative tiles, in which class were thought to be included all those attractive colors and units to be seen in hotels, libraries, clubs, fine residences, and similar buildings—the belief in most cases prevailing that the tiles in each of such installations were especially made to fit each pattern or design and consequently involved considerable cost, and hence were to be avoided for ordinary usage.

Architects Must Know Materials.

Architects are designers, but before they can design they must have complete data as to the materials with which they are to work out the designs—should know source, production, and characteristics of tile, and colors and sizes readily obtainable.

Take for instance the white glazed wall tile, for which I have made the plea for variety in shading. An architect, desiring to design side-wall treatments with flush panels former by "header" effects or "rowlocks," or desiring to use a "soldier" course with small bands, intending for good reasons to tile the wall to the ceiling instead of using a wainscot, consults the white tile list, and finds that apparently nothing is made in this class of tile, whether bright, semi-matt, or matt glaze, smaller than 4¼x2⅛ inches.

He probably gives up his idea of securing original effects in the case intended and specifies the usual wainscot with the usual stereotyped field of 3x6 or 6x6, or he may risk what seems to be certain increased expense and use a 3x3 or 4¼x4¼ square with any one of the 57 varieties of caps made before the present standardization program was inaugurated.

He may have noticed in the list of enamel tiles some small sizes very suitable for his design if they could be had "self-colored" with the wall, but as he does not want them in any other color his determination to stick to the conventional "wainscot" increases.

Now what are the facts? I asked friend Walker why these small sizes were not made in the white tiles and he said they are. I showed him the list of white sizes and he said that small sizes take the enamel list.

And there you have it in a nutshell—all right from the industry standpoint, but where do the specifier and the user come in? They are left absolutely in the dark because it happens that colored tiles naturally cost more than white tiles and that small tiles cost more than large ones. The cost being the same, they have heretofore both taken the same list.

And while of course architects want to know relative costs, they have been deprived all these years of the knowledge that they can really design in white tiles, the small units being available in 6 inch, 4¼ inch, and 3 inch lengths down to half and quarter inch widths, with a range of intermediate sizes.

With faience work and with tiles which are made to conform to special locations and designs, the situation is of course different, even though here the desirability of complete information is apparent.

But where the information is most sadly lacking is with regard to that class of tile at once colorful, durable, and imprevious (if not always entirely vitreous), with or without glaze, and if with glaze containing texture and but little gloss—that class of tile which is commercially available in every desirable color and necessary size and shape to accomplish every effect decired by a capable designer. Ah, here is the material and here is the man, each waiting to be made better acquainted with the other to the benefit of both.

Architect's Opportunity.

What opportunities await the eager designer if his palette is filled with just what he wants! And what opportunities confront the industry fulfilling these wants and continuing to develop! Having pulled itself through the Victorian era of the vari-colored geometric pattern, and erred since on the side of the white ceramic mosaic floor with its many colored dots and dashes, let the industry now get away from some of these present-day effects, and come into its own in co-operation with those who design with feeling for the product they use. Let floors be so designed and laid as not to require rugs except where rugs properly belong. Let corridors, lobbies, and appropriate spaces and rooms be made more attractive as well as utilitarian through the use of tiling designed with thorough knowledge of the materials, colors, and textures available.

And remember that jointing in tilework is an essential feature frequently desirable structurally as well as artistically. Do not lose sight for one moment of the proper methods of application, which vie in importance with the making of tiles.

With the hearty co-operation of many architects in addition to the co-operaton which the members of your association have given the tile manufacturers, it will soon be possible for architects everywhere to specify that all tile shall be set in accordance with the basic specifications of The Associated Tile Manufacturers. Nearly all architects with whom I have talked have assured me that it will afford them the greatest satisfaction as well as assistance so to specify their tile work. And if you members of the Tile & Mantel Contractors' Association will maintain your association in accordance with the traditions of your craft, and help architects to see the provisions of these specifications faithfully carried out, you will take your rightful part in solving tile problems for the benefit of all concerned.

Burning Clay Wares

by

Ellis Lovejoy

Written for The Clay-Worker.

THE CLAY-WORKER.

EQUALIZATION TABLES.

EQUALIZATION tables are used by engineers in designing structures involving the movement of fluids, but their use is not limited to engineers. The farmer and drain tile maker should use them in determining the proper sizes of mains and laterals. The factory superintendent who plans the kilns, dryers, stacks, hot air and gas systems, should have at hand the tables and not follow rules of thumb, assumptions, guesses, which are only too common in clay-working factory construction and often the cause of inefficient operation and considerable loss.

The following tables are used in our engineering work but have been re-calculated and extended for this publication.

The equalization tables are for circular pipes of given diameters.

The numbers to the left are the diameters of the mains and the numbers at the top are the diameters of the laterals. The numbers in the body of the table are the equivalent number of laterals in each main.

For example, if we wish to use six-inch laterals and desire to know how many of them are equivalent to a 20-inch main, we find on the first page of the tables in the column headed by 6 opposite the number 20, the number 20.3 which is the number of smaller circles equivalent in carrying capacity to the larger circle.

Assume that we have a 30-inch main and wish to know how many 8-inch pipes may be taken off from it. In the tables opposite 30 in the column to the left and under the column headed 8 we find 28 which is the number of pipes required.

Again we have 32 pipes 9 inches in diameter and wish to know the size of the main. We drop in column headed by 9 to the number 32, and opposite this in the column on the left we find that the main should be 36 inches in diameter.

The tables are extended to cover 48-inch mains and 36-inch laterals, but it is possible to get the data for any sizes. Suppose we have a 60-inch main and wish to know how many 36-inch laterals it will require to equal it.

Sixty is beyond the limit of the tables, but if we halve it and the size of the lateral, the number of pipes is the same. Halving the two numbers gives us a 30-inch main and an 18-inch lateral. Opposite 30 and under 18 we find the number of laterals to be 3.6. Or we may quarter the sizes of the pipes, or divide them by any number to get sizes within the limits of the table and the results will be practically the same.

For example, if we quarter the above given main and lateral we have 15 inches for the main and 9 inches for the lateral and from the table we find that 3.6 of the latter are equal to the former.

Conversely, if we have given the number of lateral pipes and the number exceeds the limit of the tables, we may determine the size of the main pipe for half the size of the laterals and double the result, as for instance sixty 10-inch laterals to find the main. We look in column headed 5 and find that 62 pipes (the nearest number to 60) require a 26-inch main, and therefore a 52-inch main will be the proper size for approximaely 60 pipes 10 iches in diameter.

The problem is the same for large mains, as for example, assume we have a 60-in. main and wish to take off 100 laterals, what will be the size of the laterals? Since 60 is not in the table we will take 30 and we find that 100 is between 154 in the column headed by 4, and 88 in the column is headed by 5, but it is nearer the latter than the former. Evidently the size of the lateral is between 9 and 10 and the size used will depend upon whether one wishes the carrying capacity of the main or the laterals to be in excess.

If one desires the exact size, he must resort to the formula which is the ratio of the square roots of the fifth powers of the diameters of the circles. Where the numbers are small one may interpolate in the tables and get a close approximation of the exact size, but interpolation is liable to wide error where the numbers are high.

IMPORTANT TO STUDENTS AND CERAMIC ENGINEERS.

THE SUPPLEMENTARY Equalization Table appearing opposite, together with Tables on Rectangles in Equivalent Circles to be published in the July issue of The Clay-Worker, represent an immense amount of painstaking work on the part of the author, Ellis Lovejoy. It is the result of careful calculation and research covering a period of many years, and mathematical skill of no mean proportions. It is a most valuable addition to ceramic engineering data and is an important contribution to the literature of the clay craft. These tables will later appear in Mr. Lovejoy's book entitled "Burning Clay Wares," now on The Clay-Worker press.

n Table

by

E. M.

	1	2	3	8	29	30	31	32	33	34	35	36
2	5.7											
3	15.6	2.7										
4	32	5.7	2									
5	56	9.7	3									
6	88	15.6	5									
7	130	23	8									
8	181	32	11									
9	243	42	15									
10	316	56	20									
11	401	71	26									
12	499	90	32									
13	609	108	39									
14	733	129	47									
15	871	154	56									
16	1024	181	65									
17	1192	211	76									
18	1375	243	88									
19	1574	277	100									
20	1789	316	114									
21	2021	358	130									
22	2270	402	145									
23	2537	449	162									
24	2822	499	180									
25	3125	553	203									
26	3447	610	221									
27	3788	670	243									
28	4148	734	265									
29	4529	801	289	1.1								
30	4930	872	314	1.2	1.1							
31	5351	947	343	1.3	1.2	1.1						
32	5792	1025	372	1.4	1.3	1.1	1.1					
33	6256	1107	401	1.5	1.4	1.2	1.2	1.1				
34	6740	1195	432	1.6	1.5	1.3	1.3	1.2	1.1			
35	7247	1282	465	1.7	1.6	1.4	1.4	1.3	1.2	1.1		
36	7776	1376	498	1.8	1.7	1.5	1.5	1.3	1.2	1.2	1.1	
37	8328	1456	533	1.9	1.8	1.6	1.6	1.4	1.3	1.2	1.1	1.1
38	8902	1576	571	2.1	1.9	1.8	1.7	1.5	1.4	1.3	1.2	1.1
39	9498	1681	609	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2
40		1791	649	2.4	2.2	2.0	1.9	1.7	1.6	1.5	1.4	1.3
41		1905	691	2.6	2.4	2.2	2.0	1.8	1.7	1.6	1.5	1.4
42		2023	733	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.6	1.5
43		2146	777	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.7	1.6
44		2273	824	3.1	2.8	2.6	2.4	2.2	2.1	1.9	1.8	1.7
45		2404	871	3.3	3.0	2.8	2.5	2.3	2.2	2.0	1.9	1.7
46		2540	921	3.5	3.2	2.9	2.7	2.5	2.3	2.1	2.0	1.8
47		2680	971	3.6	3.3	3.1	2.8	2.6	2.4	2.2	2.1	1.9
48		2825	1023	3.8	3.5	3.2	3.0	2.8	2.6	2.4	2.2	2.1

Equalization Table

Compiled by

Ellis Lovejoy, E. M.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
2	5.7																																			
3	15.6	2.7																																		
4	32	5.7	2.3																																	
5	56	9.7	3.6	1.8																																
6	88	15.6	5.7	2.8	1.6																															
7	130	23	8.3	4.1	2.3	1.5																														
8	181	32	11.6	5.7	3.2	2.1	1.4																													
9	243	42	15.6	7.6	4.3	2.8	1.9	1.3																												
10	316	56	20.3	9.9	5.7	3.6	2.4	1.7	1.3																											
11	401	71	26	12.5	7.2	4.5	3.1	2.2	1.7	1.3																										
12	499	90	32	15.6	8.9	5.7	3.8	2.8	2.0	1.6	1.2																									
13	609	108	39	19.0	10.9	6.9	4.7	3.4	2.5	1.9	1.5	1.2																								
14	733	129	47	23	13.1	8.3	5.7	4.1	3.0	2.3	1.8	1.5	1.2																							
15	871	154	56	27	15.6	9.9	6.7	4.8	3.6	2.8	2.2	1.8	1.4	1.2																						
16	1024	181	65	32	18.3	11.6	7.9	5.7	4.2	3.2	2.6	2.1	1.7	1.4	1.2																					
17	1192	211	76	37	21.3	13.5	9.2	6.6	4.9	3.8	3.0	2.4	2.0	1.6	1.4	1.2																				
18	1375	243	88	43	24	15.6	10.6	7.7	5.7	4.3	3.4	2.8	2.3	1.9	1.6	1.3	1.2																			
19	1574	277	100	49	28	17.8	12.1	8.8	6.5	5.0	3.9	3.2	2.6	2.2	1.8	1.5	1.3	1.2																		
20	1789	316	114	56	32	20.3	13.8	9.9	7.4	5.7	4.5	3.6	2.9	2.5	2.1	1.7	1.5	1.3	1.1																	
21	2021	358	130	63	35	23	15.6	11.2	8.4	6.4	5.2	4.1	3.3	2.8	2.3	2.0	1.7	1.5	1.2	1.1																
22	2270	402	145	71	41	26	17.5	12.5	9.3	7.2	5.7	4.5	3.7	3.1	2.6	2.2	1.9	1.7	1.4	1.3	1.1															
23	2537	449	162	79	47	29	19.6	14.0	10.4	8.0	6.3	5.1	4.1	3.4	2.9	2.5	2.1	1.8	1.6	1.4	1.2	1.1														
24	2822	499	180	88	50	32	22.3	15.6	11.6	8.9	7.0	5.7	4.6	3.8	3.2	2.8	2.4	2.1	1.8	1.6	1.3	1.2	1.1													
25	3125	553	203	97	55	35	24	17.3	12.9	9.9	7.8	6.4	5.2	4.2	3.6	3.1	2.6	2.2	2.0	1.7	1.5	1.3	1.2	1.1												
26	3447	610	221	108	62	39	27	19	14.2	10.9	8.6	6.9	5.7	4.7	4.0	3.4	2.9	2.5	2.2	1.9	1.7	1.5	1.3	1.2	1.1											
27	3788	670	243	118	68	43	29	21	15.6	12.0	9.4	7.5	6.2	5.2	4.3	3.7	3.2	2.7	2.4	2.1	1.9	1.6	1.5	1.3	1.2	1.1										
28	4148	734	265	129	74	48	32	23	17.1	13.1	10.3	8.3	6.8	5.7	4.8	4.1	3.5	3.0	2.6	2.3	2.1	1.8	1.6	1.5	1.3	1.2	1.1									
29	4529	801	289	142	79	52	35	25	18.6	14.3	11.3	9.1	7.5	6.2	5.2	4.4	3.8	3.3	2.9	2.5	2.2	2.0	1.8	1.6	1.4	1.3	1.2	1.1								
30	4930	872	314	154	88	56	38	28	20.3	15.6	12.3	9.9	8.1	6.7	5.7	4.8	4.1	3.6	3.1	2.8	2.4	2.2	1.9	1.7	1.6	1.4	1.3	1.2	1.1							
31	5351	947	343	167	96	61	41	30	22	16.9	13.3	10.7	8.8	7.3	6.1	5.2	4.5	3.9	3.4	3.0	2.6	2.4	2.1	1.9	1.7	1.5	1.4	1.3	1.2	1.1						
32	5792	1025	372	181	103	66	45	32	23	18.3	14.4	11.6	9.5	7.9	6.6	5.7	4.8	4.2	3.7	3.2	2.8	2.5	2.3	2.0	1.8	1.6	1.5	1.4	1.3	1.1	1.1					
33	6256	1107	401	195	110	71	48	35	25	19.8	15.6	12.5	10.3	8.5	7.2	6.1	5.2	4.6	3.9	3.5	3.0	2.7	2.4	2.2	2.0	1.8	1.6	1.5	1.4	1.2	1.2	1.1				
34	6740	1195	432	211	120	76	52	37	27	21	16.8	13.5	11.1	9.2	7.7	6.6	5.7	4.9	4.2	3.7	3.3	2.9	2.6	2.4	2.1	1.9	1.7	1.6	1.5	1.3	1.3	1.2	1.1			
35	7247	1282	465	226	130	82	56	40	30	23	18.1	14.5	11.9	9.9	8.3	7.1	6.1	5.3	4.6	4.0	3.5	3.1	2.8	2.5	2.3	2.1	1.9	1.7	1.6	1.4	1.4	1.3	1.2	1.1		
36	7776	1376	498	243	139	88	60	43	32	25	19.4	15.6	12.8	10.6	8.9	7.6	6.5	5.7	5.0	4.3	3.7	3.4	3.0	2.7	2.4	2.2	2.0	1.8	1.7	1.5	1.5	1.3	1.2	1.2	1.1	
37	8328	1456	533	260	148	94	64	46	34	26	20.8	16.7	13.7	11.3	9.5	8.1	6.9	6.1	5.3	4.6	4.0	3.6	3.2	2.9	2.6	2.4	2.1	1.9	1.8	1.6	1.6	1.4	1.3	1.2	1.1	1.1
38	8902	1576	571	278	159	101	69	49	37	28	22	17.8	14.6	12.1	10.2	8.6	7.4	6.5	5.7	5.0	4.3	3.9	3.4	3.1	2.8	2.6	2.3	2.1	1.9	1.8	1.7	1.5	1.4	1.3	1.2	1.1
39	9498	1681	609	296	170	107	73	52	39	30	24	19	15.6	12.9	10.9	9.2	7.9	6.9	6.0	5.3	4.6	4.2	3.7	3.3	3.0	2.8	2.5	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2
40		1791	649	316	181	114	78	56	41	32	25	20	16.6	13.8	11.6	9.8	8.5	7.3	6.4	5.6	5.0	4.5	4.0	3.6	3.2	3.0	2.7	2.4	2.2	2.0	1.9	1.7	1.6	1.5	1.4	1.3
41		1905	691	336	193	122	83	59	44	34	27	22	17.7	14.6	12.3	10.5	9.0	7.8	6.8	6.0	5.3	4.7	4.2	3.8	3.4	3.1	2.8	2.6	2.4	2.2	2.0	1.8	1.7	1.6	1.5	1.4
42		2023	733	357	205	129	88	63	47	36	29	23	18.8	15.5	13.1	11.1	9.6	8.3	7.2	6.4	5.6	5.0	4.5	4.1	3.6	3.3	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.6	1.5
43		2146	777	379	216	137	93	67	50	38	30	24	19.9	16.5	13.9	11.8	10.2	8.8	7.7	6.8	6.0	5.3	4.8	4.3	3.8	3.5	3.2	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.7	1.6
44		2273	824	401	229	145	99	71	53	41	32	25	21.1	17.5	14.7	12.5	10.8	9.3	8.1	7.2	6.3	5.6	5.1	4.5	4.1	3.7	3.4	3.1	2.8	2.6	2.4	2.2	2.1	1.9	1.8	1.7
45		2404	871	424	243	154	105	75	56	43	34	27	22.3	18.5	15.5	13.2	11.4	9.9	8.6	7.6	6.7	6.0	5.3	4.8	4.3	4.0	3.6	3.3	3.0	2.8	2.5	2.3	2.2	2.0	1.9	1.7
46		2540	921	448	255	163	111	79	59	45	36	29	23.6	19.5	16.4	14.0	12.0	10.4	9.1	8.0	7.1	6.3	5.6	5.1	4.6	4.2	3.8	3.5	3.2	2.9	2.7	2.5	2.3	2.1	2.0	1.8
47		2680	971	473	270	172	117	83	62	48	38	30	24.9	20.6	17.3	14.7	12.7	11.0	9.6	8.5	7.5	6.7	6.0	5.4	4.8	4.4	4.0	3.6	3.3	3.1	2.8	2.6	2.4	2.2	2.1	1.9
48		2825	1023	499	285	181	123	88	65	50	40	32	26.2	21.7	18.2	15.5	13.4	11.6	10.1	9.0	7.9	7.0	6.3	5.7	5.1	4.6	4.2	3.8	3.5	3.2	3.0	2.8	2.6	2.4	2.2	2.1

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Written for THE CLAY-WORKER.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.

BAD WEATHER conditions, coupled with the coal shortage, have worked some against building operations in Evansville and southern Indiana during the past few weeks, but with the coming of better weather it is believed there will be a great deal more building started and that this year, taken as a whole, will show a big improvement in building over last year, notwithstanding the fact that building materials are rather high. A great deal of rain fell during the month of May and early in June and there were many days when work on buildings started, had to be suspended for the time being. This was not only true of Evansville, but of many of the other towns in southern Indiana, southern Illinois and western and northern Kentucky. Construction on many of the buildings in Evansville has ceased during the past few weeks because of the shortage of brick, due to the strike of the brickmakers and clayworkers in that city, according to John Andres, secretary of the Standard Brick Manufacturing Company. At least a dozen factories and houses are being built and because of the scarcity of brick construction work had to be stopped. A meeting of the strikers, about 100 in number, who went out upon the refusal of the employers to recognize the union, was held the other day and an address was made by Frank Kasten, of Chicago, national president of the United Clay Workers of the United States. Kasten went to Evansville to bring about negotiations between the men and the employers, but stated after viewing the situation that he did not believe the clayworkers could make much headway by requesting conferences with the employers at this time.

The fuel shortage, too, is worrying the brick and tile manufacturers in the tri-state territory. A few days ago two large brick factories at Albion, Ill., one at Huntingburg, Ind., and the plant of the United States Brick Company at Tell City, Ind., were forced to close down because they were not able to get coal. Appeals were made to the coal operators at Evansville and other points for coal, but the appeals did not avail anything. It is feared that the closing of these plants will seriously affect building operations in the tri-state section and if the fuel shortage continues other large brick plants may be forced to close down within a short time.

In spite of the many handicaps that have presented themselves, there has been some building and a great deal more has been planned. Excavating work for the new Victory hotel and theater building at the corner of Main and Sixth streets at Evansville is expected to start within a short time, it has been announced. Many of the old buildings in that vicinity have been wrecked, getting ready for the new buildings, which will cost in the neighborhood of $600,000.

It has just been announced that an eight story office and apartment building that will cost several hundred thousand dollars, will be built at the corner of Main and Seventh streets. The structure will be built by the Standard Evansville Theater Company of Chicago, that will build the theater and hotel at the corner of Main and Sixth streets, will build the office and apartment building. This company has just secured a ninety-nine year option on the property at the corner of Main and Seventh streets where the Wellington hotel now stands, also the property now occupied by the Wood Drug Company. It is said that actual work on the building of the Main and Seventh street structure will start as soon as the Victory hotel and theater at Main and Sixth streets is well under way.

Work on the new buildings for the Evansville College will begin some time this year, or as soon as the plans and specifications have been approved. The college has been occupying temporary quarters since it was moved to Evansville from Moore's Hill, Ind. The plans now are in the hands of a Chicago architect.

Pottery plants at Evansville are being operated on steady time and this has been a very busy season for them, in fact a larger volume of trade than last year up to this time has been reported.

Although a wage contract existed between the employes of the Brazil Clay Company at Brazil, Ind., and the company, the company has increased the wages of its employes. The minimum is now 50 cents an hour for laborers.

In many of the southern Indiana and western and northern Kentucky towns and cities this summer building and loan associations have assisted numerous people to build their own homes. A new building and loan association, known as the Farmers, at Evansville, with a capital stock of $20,000, has just been organized and will assist people in the building of homes.

A number of the brick contractors of Terre Haute, Ind., have incorporated the Masons' Contractors Association for the purpose of promoting and encouraging efficiency in the art of brick construction, of improving conditions in the brick construction business and of developing a friendly spirit among the members. The directors of the association for the first year are William Irwin, Walter E. Conover, Ernest V. Miller, Harry Minter and James W. Pratt.

Henry C. Kleymeyer, president and general manager of the Standard Brick Manufacturing Company at Evansville, a few days ago received word from Henderson, Ky., of the death of the Rev. T. C. Gebauer, one of the best known Evangelical ministers in Kentucky, who was a brother-in-law of Mr. Kleymeyer.

The Best Brick Company at Evansville, a conecrn organized several months ago with Walter Woods as manager, is expecting a nice lot of trade during the balance of the year.

A. HOOSIER.

AMONG PHILADELPHIA BRICK MEN.

BUILDING IN Philadelphia during May broke the record. It went ahead of April, which up to that time was the banner month. June was expected by all authorities to exceed May. The building trades got an increase in wages in May which gives some of them $60 a week straight and about $80 with overtime. All the building trades shared in the increase, while some of them hope this will end the constantly recurring demand for higher wages for a time, they may, perhaps, be pardoned if they wonder what the next demand is going to be. Though prices go up and up, building continues and the builder and the owner do not seem to be seriously frightened by the development of high prices.

Common brick are priced at $25.00 in this city, and seem to be steady at that figure. In Pittsburgh they are reported selling at $20.00 and in Scranton the price is $28.00; Allentown quotes $22.00, or thereabouts and reports a good demand.

An interesting and helpful phase of the brick industry in Philadelphia is the co-operative advertising done by seven of the brick concerns of the city. These concerns include the North Philadelphia Brick Works, Keystone Brick Company, Frankfort Brick Works, John N. Earley, Joseph T. Byrnes' Estate, H. W. and C. B. Singer and F. Seitter's Sons.

They have united in doing local advertising which surpasses that commonly done. The arguments in the advertisements are convincing and the illustrations used, or perhaps it is better to say, that the examples to which attention is directed, are even more convincing. They show what common brick has done, and in this way are more likely to bring business than argument alone. —A QUAKER.

RECENT PATENTS IN THE CLAYWORKING INDUSTRY.

[Full description and specifications of the following patents may be had by addressing **The Commissioner of Patents, Washington, D. C.**, and enclosing ten cents for each patent wanted. In ordering, give number of patent only.]

No. 1,341,071. Hollow Tile. Richard S. Requa, San Diego, Cal., Patentee.

Patent for a tile unit comprising a plurality of hollow offset body parts, angularly-related webs in such body parts in alignment with and forming direct line continuations of the normally outer wall section of another body part, whereby such unit may be divided along the line of any web to form such webs as an outer wall of a special form tile.

No. 1,341,077. Method of Constructing One-Piece Fire-Brick Arch. William A. L. Schaefer, Chicago, Ill., patentee. Patent assigned to Jointless Fire Brick Co., Chicago, Ill.

This patent is for a method of constructing a one-piece fire-brick arch which consists in arranging a bar or pipe through a boiler setting, anchoring the opposite ends of the bar or a pipe in the walls of the boiler setting, then anchoring one end of a metallic sheet or plate in one of the walls of the boiler setting, supporting the opposite end of the sheet or plate upon the bar, and then installing a mass of plastic fire brick material on the metallic sheet.

No. 1,335,071. Brick-Making Machine. Oliver J. Moussette, Brooklyn, N. Y., patentee.

Patent awarded for a brick machine embracing the combination of a mold formed with a vertically extending mold cavity open at both ends, a slide mounted on the mold to travel therewith and adapted to close the bottom of the mold cavity and support the material in the mold, means working above and below the mold to compress material against the slide, and means for moving the slide laterally to uncover the bottom of the mold cavity.

No. 1,341,078. One-Piece Fire-Brick Arch Construction. William L. Schaefer, Chicago, Ill., patentee. Patent assigned to Jointless Fire Brick Co., Chicago, Ill.

Patent for a method of constructing a one-piece fire-brick arch consisting of extending a plurality of joists between the head of the boiler and a wall of the boiler setting, supporting one end of the joists in the longitudinal flue passages of the boiler, anchoring the opposite ends of the joists in the boiler setting wall, and arranging a second group of joists transversely across the first joints.

No. 1,342,404. Vacuum Brick. Alfred E. D'Harlingue, St. Louis, Mo., patentee.

As a new article of manufacture, a blown glass brick of rectangular form having a tapered circular tenon at one end, a tapered circular pocket at its other end and having in its upper and lower walls longitudinally extending mortar-receiving pockets that are relatively small in proportion to the contact surface between the upper and lower surfaces of abutting bricks.

No. 1,339,596. Brick Building Construction. Theophile Depatie, Montreal, Canada, patentee.

A wall comprising a plurality of superposed layers of horizontally- laid bricks arranged longitudinally of the wall and having their top and bottom faces formed with mating locking ribs and grooves located centrally and longitudinally thereof.

No. 1,342,208. Mold for Making Building Tile. Leonard H. DeFernelmont, Philadelphia, Pa., patentee.

Patent for a mold for making building tiles comprising two right-angled frames, one of which has its inner face grooved and the other of which has its inner face ribbed, and of the same general cross-section as the grooves, and the bounding flanges on each side of the ribs and grooves made flaring in opposite directions, the flare of the flanges at each side of the mold being such that if continued they would intersect at a common point, and means for detachably clamping the two frames together to form a rectangular mold frame separable into two parts at diagonally opposite corners.

No. 1,339,388. Building Construction. Herman Hauss, Philadelphia, Pa., patentee.

In a building construction, a plurality of bricks each having a high part and a low part, said bricks being placed in rows with their high slides adjacent each other and so disposed as to leave spaces betwen their high sides and other spaces between their low sides, concrete beams filling the spaces between the high side and overlapping the high parts of the bricks.

No. 1,341,798. Apparatus for Making Bricks. Henry W. B. Graham, New London, Ohio, patentee. Patent assigned to The Arnold-Creagor Co., New London, Ohio.

A patent given for an apparatus for making bricks, comprising the means for filling molds with material for brickmaking, of means for inverting each mold and substantially simultaneously separating the mold from the bricks, and means for successively feeding to a position for filling and then to said inverting means.

Trade Marks and Designs Patented.

No. 131,361. Drying Machinery for the Manufacture of Clay and Ceramic Products. Philadelphia Drying Machinery Co., Philadelphia, Pa.

No. 127,914. Brick and Tile Made From Fire Clay. Clearfield Clay Working Co., Clearfield, Penna.

DRAIN TILE SPECIFICATIONS.

Those who have not already done so should get a copy of the report of Committee C-6 of the American Society for Testing Materials on drain tile for study and reference. This committee held three meetings during the year, and its report brings out at least two interesting features about drain tile. One has to do with the effect of alkali and acid soil conditions upon drain tile. This work is not yet complete, but it is developing some interesting information. The other has to do with freezing and boiling tests, and recommends that the boiling end of these tests be dispensed with. The reason given is that boiling has a weakening tendency, especially marked in concrete, and that it is not essential or fair to real tests for the quality to withstand freezing. Every tile man should be identified with this organization and its work, both for the sake of being kept informed, and to have a hand in properly shaping specifications which result from these tests.

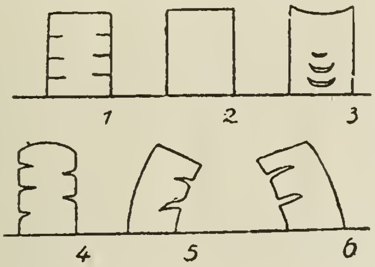
A METRIC FIGHT ON.

We have had a fairly regular diet of literature and argument from the World's Trade Club, in San Francisco, in favor of the adoption of the metric system of measurement. Now comes the American Institute of Weights and Measures, 115 Broadway, N. Y., with some opposing literature telling why the metric system is not desirable and would not be good for us if made our exclusive standard. So now there is a metric fight on and the arguments in the case are contributing some to the shortage of good white paper. Whether the facts brought to light by the arguments prove worth the cost or not remains to be seen. Meantime we will probably manage to struggle along on our feet by inches and to carry weight by the pound.

ROOFING TILE TROUBLES.

THE TROUBLES EXPERIENCED by many manufacturers of roofing tiles commence with the production of the column of clay issuing from a mouthpiece attached to a pug mill of the tiling machine. The general arrangement of the pug mill and the construction of the mouthpiece are similar in most of the machines used for this purpose, but it is the details—often apparently small and unimportant—which make all the difference in the result. The facility or difficulty with which the clay paste passes through the mouthpiece, the distance between the front or exit end of the shaft in the pug mill, and the amount of taper possessed by the mouthpiece, are all details of great importance, and their correct adjustment will go a long way towards ensuring success.

If a wire-cut tile machine is not working properly, it is well to observe the shape and other characters of the column of clay issuing from the machine. A piece about 3 feet long should be extruded, and the machine should then be stopped. If the column of clay paste is flat and quite straight (Fig. 1), it is probably satisfactory, even though not all that can be desired. It is more likely to give a better result if the two sides travel rather faster than the centre, giving a shape like that in Fig. 2. The reason is that, when drying, the edges shrink more rapidly than the center, and tend to strain the latter, producing side cracks (Fig. 1). By allowing the sides to travel rather more rapidly, a counter-effect is produced which results in a straight tile without strain when the drying is complete.



If, however, the center of the column travels excessively slowly, there is a great tendency for transverse cracks to be formed, and when these occur (Fig. 3), it is a sign that the lubrication in the mouthpiece is excessive, or that something is present which acts as a brake on the center of the clay column.

A more usual defect is produced by the center of the column traveling more rapidly than the sides, owing to faulty construction of the mouthpiece or insufficient lubrication. The result is the formation of the characteristic "dog's teeth" cracks on the sides of the clots of clay (Fig. 4). The only remedy is the use of a better made mouthpiece, or to allow a better lubrication. Occasionally, however, the clay is too dry, or contains too much non-plastic materials (i.e., it is too short), and the defect may be remedied by using more water or more plastic material. As this defect occurs far more frequently than any other, the roofing tile manufacturer should pay special attention to the construction and lubrication of the mouthpiece and the consistency of the clay paste. In connection with the latter, it should be observed that an inefficient pug mill with worn knives or with the ends of the shaft too near the end of the mouthpiece, may easily cause this defect, as it does not ensure the proper mixing of the clay.

Somtimes the column of clay does not travel in a straight line, but curves to one side, as in Figs. 5 and 6. This is a sign that there is more friction on one side of the clay column than on the other, the cracks occurring on the side of the mouthpiece which requires attention. Sometimes this defect is due to some obstruction in the mouthpiece, occasionally to the stoppage of the supply of lubricant at one side of the mouthpiece, and sometimes by the mouthpiece sloping instead of being straight. In the last mentioned case, a very slight angle (scarcely visible to the eye) is sufficient to cause the curvature of the column of clay.

Many problems are now confronting the building trades

It should be noted that all these defects are really due to one cause—the effect of friction between the sides of the mouthpiece and the clay column. Hence they are all remedied by adjusting the mouthpiece in such a manner as to reduce the friction to a minimum.

—The British Clay-Worker.

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.

THE EFFECTS of the building material shortage is becoming noticeable in the construction reports in Milwaukee and other cities of Wisconsin. Although there were indications of hesitancy on the part of builders for some time after prices began to soar, in going ahead with construction plans it was soon realized that the increased prices were the natural results of higher costs and labor and material and prices on all commodities. The first quarter of 1920 has been one of the biggest building years for Milwaukee, but operations are now on the decrease. This is due almost entirely to the difficulty in getting materials on account of the lack of transportation facilities.

While announcements are being made of a break in lumber prices that will reduce the cost of an ordinary home by several hundred dollars and may stimulate home building, if there is a possibility of getting the lumber to build with, dealers say that other building materials do not show any weakening in price. This is laid to the situation in the material manufacturing field, as manufacturers are five or six months behind with orders. Also that it is impossible to get material and that the indications are more favorable for an advance of 10 per cent. than for any reduction.

"Brickmakers are away behind their orders in the whole middle west," according to an official of the Burnham Bros. Brick Co. "There is no prospect for brick prices to go lower for another six months at least."

Not only are building permit figures below those of last year, but the average cost per project is decidedly lower. For the week ending May 27, the building inspector's department issued 610 permits forconstruction valued at $320,992. In the same week of last year 543 permits for construction valued at $562,088 had been granted. The decrease is more sharply brought out when considering the estimated cost of the average project. A year ago it was $1,035, while this year it is but $526. Figures for the month show that 2,330 permits had been granted for construction to cost $1,130,750. During May, 1919, the number of permits was 2,039, and the total value $1,982,965. Reducing these statistics to the costs of average building projects, the cost for the month of May was $485, compared with $973 for last year.

With the arrival of coal shipments which have been delayed in transit for some time, the plant of the Kewaunee Clay Products Co., at Kewaunee, Wis., has resumed operations. The first batch of brick was being burned late in May. Delays occasioned by the shortage of materials and failure of shipments to arrive as scheduled, have been frequent and have resulted in postponement from time to time of the beginning of actual production. The work is under the supervision of W. J. Benner, an experienced technical and practical brick and tile maker. With the completion of the first batch of brick the construction of additional kilns will be started. It is expected that capacity operations will continue as orders on hand will keep a full crew busy for over a year.

—A BADGER.

GNATS AND CAMELS.*

THE CAMEL REFERRED to in the title of this paper is or has no relation to the symbol of the present Great American Desert. It has allusion to a certain lack of perspective; that is, the habit of unconsciously viewing things out of their true relative proportions.

The habit is very like using first one end of a telescope and then the other—magnifying the importance of small items and minimizing the import of great ones. A man having a field glass for the first time, went out into a pasture to test the instrument. The results were disconcerting; while he was watching the antics of a bull a mile away, the bull tossed him over the fence.

Many a business enterprise has been tossed over the fence by what up to the moment appeared to be a distant trifle.

Consider our methods of purchasing supplies. First a requisition is carefully and thoughtfully made out. Then comes the inquiry as to the necessity of purchasing as much as the requisition calls for—or of purchasing any; and when it is found that we cannot evade ordering the material called for by the requisition, we secure quotations.

What inquiry is made, from requisition to purchase, of the service given by similar material previously purchased and used? How many of us, for instance, have any record as to the service from a belt purchased five years ago?

We strain at gnats and we swallow camels.

In a paper read recently in Philadelphia by Mr. Harrington Emerson, he said:

Twenty years ago when I recommended the use of the best quality of belting I was suspected of having been bribed by the belting manufacturers, yet in consequence of the improved quality we used only one-tenth as much.

We can carry the illustration further. We ask the foreman or storekeeper to check up the sizes and weights, we compare the prices and chain discounts with the quotations, we audit the extensions and finally we pay the invoice with a check which is signed, co-signed, and countersigned. To this there can be no objection save that we do not apply the same care to other and greater items of expense.

The largest and most important invoice with which we have to deal is the payroll; yet in this case there is no initial requisition. The foreman generally uses his best, unaided judgment as to whom to employ and how many men for each particular job. Seldom is a record kept showing the amount of work done in comparison with the time spent and wages paid.

The purchase of a belt and the payment of the invoice for the belt, receive more consideration than the labor employed to operate the machine run by the belt. So far as records are concerned, the purchase of a wheelbarrow is of more importance than the purchase of labor to propel it.

We swallow the camel.

Similar considerations apply to the use of supplies. Before their purchase, clay picks are valuable. After they have been received they no longer represent money—they are merely clay picks. To let a bill pass the discount period without being paid, is a serious blunder. But the careless use of supplies involves losses far in excess of the discounts obtained.

I wonder if superintendents do not smile when they consider the difficulties placed in the way of ordering material which, once it is received, may be used by them as recklessly as they please.

In matters relating to asscociation activities, we show the same lack of perspective. We look at the dues, so and so much per thousand—I should say "so little per thousand"—then we multiply this rate by our output, look at the total and choke. Yet when we look over our cost sheets for the month, we regard as insignificant variations far greater than the dues in our association.

Now this is not a paper on cost accounting. If it were, I would undertake to show that any manufacturer who looks askance at his association dues (and at the time and expense of attending association meetings) is straining at a gnat while at the same time, if he uses the common system of cost accounting, he is swallowing a whole caravan of camels—without Fletcherizing.

Is there in fact any element of expense from which the manufacturer gets as great a return as he does from his dues to his association? Consider the credit information, research work; standardization; interchange of ideas; and do not forget the many other tangible and intangible benefits. For example: Most concerns pay their bills promptly. And they are glad to have this known to the members of the association of manufacturers from whom they buy material. So is it not fair to assume that there may be some few concerns which pay promptly because of the existence of this bureau of information—a credit bureau which insures a square deal to those who give a square deal in return?

If, as a result the general run of bills are paid only a few days earlier than they would be if there were no credit bureau in the industry, (not to mention some which might not even be paid at all), then from this source alone the members' dues are repaid in full.

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* A paper read before The Refractories Manufacturers' Association at a meeting held in Pittsburgh, Pa., on Tuesday, April 20, 1920, by G. W. Greenwood, of the United Refractories Company.

Consider the benefits, alike to manufacturer and user of refractories, for instance, of standardization. Not many years ago, each manufacturer of fire brick had his own design of keys, wedges, cupola, etc., and because of this very lack of uniformity among the manufacturers themselves, large users of material also had their own designs. Not that any one felt his particular design was intrinsically better, but because he had to have some design to tie to. As a result, a manufacturer might have a large stock of a certain shape on hand, yet find it necessary to make a small run of the same shape but of a different size, to meet the requirements of an order he had booked. When brick were scarce, the purchaser had to refigure his requirements to suit the sizes he might pick up and the brickmason had to learn his trade over again with each shipment.

Now the user of standard shapes can get better service and the manufacturer can take better care of all orders with a much smaller stock of brick. This means lower producing costs and a consequent benefit to the consumer as well as the manufacturer. Yet to such an extent have we become accustomed to these advantages, that we do not fully appreciate what has been done for us and for all users of our products, as a result of the standardization done by this and other associations.

Another advantage is in the research department, carried on for the benefit of the members. No work by the laboratory of a single member, no matter how adequately equipped, could become as authoritative to the trade as that done by the association; and although one does find people who object to all real research work because they cannot foretell the results nor determine in advance what profits will accrue directly to themselves from the investigation, we must remember that such people are naturally unaware of the triumphs of antiseptic surgery, the consequence of lock-jaw and the hydrophobia, the preservation of food products, all consequences of Pasteur's investigations into the "barren" field of spontaneous generation—an excursus from which his well meaning friends tried to dissuade him.

They do not recall that Galvani, one of the fathers of electrical applications, was at one time contemptuously referred to as the frogs' dancing master. They ignore the "X ray" with its present surgical and commercial applications. They forget radium and its unbounded possibilities. Even within our recent memories, Congress refused to "waste any more of the country's funds in absurd attempts to fly."

But enough has been said to demonstrate this: Were one only as sure of getting from every other amount entering into his costs as full value as he receives from his association dues, he would be in an enviable position, fearing no man—except perhaps the Collector of Internal Revenue.

Another factor not fully appreciated by many business firms is the information to be derived from properly kept records; the cost of keeping such records is the gnat at which we balk, while the enormous cost of not keeping them is unrecognized and unchallenged. **The most expensive records in any business house are the ones which are not kept.**

Suppose $100 worth of your product is sold, shipped, and not paid for. You carry the open account for years and exhaust every legal means to recover it. Yet the loss of the selfsame brick, if it occurred during the unloading of the kiln from which they came (or by evaporation from the hack in the stock shed) would be regarded with indifference, if indeed it were regarded at all. Why is it that brick represent money only after they have been shipped and entered among the accounts receivable? Why do 1,000 brick shipped and not paid for, receive more consideration than 1,000 brick paid for and never shipped?

Suppose a carload of brick is sold and not paid for. We carry the open account for years and exhaust every legal means to recover it. Yet the loss of that selfsame brick, if it occurred during the unloading of a kiln (or several kilns) or by evaporation from the hacks in the stock shed, would be regarded with indifference, if indeed it were regarded at all. Why is it that brick represent money only after they have been shipped and entered among the Accounts Receivable? Why do a carload of brick shipped and not paid for receive more consideration than a carload of brick paid for and never shipped?

If the debit side of a ledger is ten cents more than the credit side, we spend three weeks trying to find out why the two sides do not balance. If we debit a kiln with 50,000 brick when it is set and credit it with 45,000 when it is unloaded, we do not spend three minutes trying to find out why it is out of balance.

A shortage in the cash drawer means that someone has to make it up in good American money. An overturned car of green brick, with a much greater monetary loss is all in a day's work and nobody pays or makes good.

They tell a story of a woman who was voyaging on Southern seas and who, noticing the navigator "shooting the sun" to get the latitude and longitude, asked a fellow passenger what he was doing. "Trying to find the equator," he answered. Later the lady approached the captain and asked if when they used the sextant again, she might look and see if she, too, might see the equator. He assented. And when once more the glass was used, the lady was invited to look through it. As she did so, the captain pulled a hair out of his head and held it across the glass. "Do you see the equator?" he asked. "Oh, yes," said she, "there's a camel walking right on top of it."

If you must use a telescope—or a field glass, or a sextant—it pays to use the right end—and look out for camels. Otherwise you are apt to keep on swallowing profits instead of putting them in the bank. Otherwise, you will strain at gnats, economizing on small matters—like association dues —and wasting a fortune by ignoring economies which could be made if you would only keep the glass steady—not turn it end for end, according to the custom long established in the brick industry.

NEW JERSEY CLAYWORKERS' MEETING.

THE SUMMER meeting of the New Jersey Clayworkers' Association and the Eastern Section of the American Ceramic Society will be held at the Trenton Country Club on Friday, June 25. The following outline of the program will give an idea of what visitors to the meeting may expect:

"Sagger Mixtures."—By C. F. Geiger, Carborundum Co., Niagara Falls, N. Y.

"Studies of Clay in the Raw State."—By A. V. Bleininger, Bureau of Standards, Washington, D. C.

"Some Recent Accomplishments in Ceramic Drying."—By D. H. Applegate, Jr., Proctor & Schwartz, Inc., Philadelphia, Pa.

"A Paper on Refractories."—By R. M. Howe, Mellon Institute, Pittsburgh, Pa.

"The Firing of High Temperature Porcelains in Dressler Kilns."—By Conrad Dressler, American Dressler Tunnel Kilns, Inc., New York City.

The meetings of the past year or two have been very enthusiastic and this meeting promises to be no exception to that rule.

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we again inaugurate a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

QUESTION: What is the proper way to start the fires in down-draft kilns with more than one stack or with multiple stacks?

Answer: Push the dampers closed in each stack and then pull out about an inch and start the fires burning. Let the kiln fill itself with the product of the fires, with smoke, until it comes out of the peepholes, then in about an hour, pull each damper out gradually, an inch at a time, every 15 minutes and when the chimneys have full draft, there should be a uniform drawing in all stacks alike.

QUESTION: What can be done, if some of the chimneys draw more than others?

Answer: Push the dampers in nearly closed in those chimneys that draw more. That will drive the heat to the chimneys with sluggish draft and by careful manipulation of the dampers, the kiln soon will have a uniform draft in all the chimneys.

QUESTION: What can be done, if some of the chimneys do not draw at all?

Answer: Cover these chimneys with a sheet iron on top and in about an hour gradually take the sheet irons off, and if that does not correct the trouble, take some real greasy waste and drop that waste down the chimneys, after lighting the waste and the flame shooting out of the top of the chimneys will heat the air in the chimneys and start the draft without fail.

QUESTION: What is the cause of some fires repulsing, that is when the flames come back out of the fireholes, instead of drawing into the kiln?

Answer: The cause of this is often damp brick set in some parts of the kilns, or too heavy firing with bituminous coal during watersmoking, or if the firemen stir up the fires too much, especially when coal is used that cakes, causing soot. Such coal should be lifted up lightly to give a little air.

QUESTION: What can be done to make repulsing fires draw into the kiln?

Answer: Do not fire the fireholes that back out, but fire all the rest and if you have cooling holes in the crown, open them right directly over the fireholes and begin to fire the repulsing fireholes light and the fires will draw in. In a few hours, cover up the crownholes and in most cases the fires will draw into the kiln. If this method should fail, throw cold water on the bagwall with a small can. This will generate steam, pop out of the firehole for an instant and then draw heat in. To get the water in the most effective way to the hot bagwall, use a syringe or a hose with a nozzle, if you have any water connections around the kilns.

QUESTION: What can be done, if a kiln gets sooted, so all the fires burn backwards?

Answer: In the first place any down-draft kiln with a single outside stack or three or four kilns with a large stack, partitioned off to the top, should have a small furnace for each flue of the stack. The object of having such a furnace is to start a fire at the beginning of the watersmoking and so heat the cold stackflue. By this method a kiln never will get sooted, as the moisture generated in the kiln will pass rapidly through the stack and the soot will have no chance to accumulate on the ware in the kiln, the ware drying out quicker without the condensation dampening the bottom courses. If such a kiln through any cause should become sooted at any stage of water smoking or oxidation, it's caused by inexcusable carelessness of the firemen.

QUESTION: What can be done if a kiln that has no such furnace at the stack, gets sooted?

Answer: Open the centerhole in the crown and if there are any sideholes, open them too. Cut up a lot of dry scrap wood, drop damper at the stack, take manhole plate off and build a fire at the bottom of the manhole and keep the fire up for an hour or two. This will heat up the stack flue and the bottom of the kiln and then when reversing the draft by pulling the damper up and covering the manhole plate, the kiln will draw and then gradually close up the holes in the crown.

QUESTION: I am located in Eastern Iowa, and am looking for some white burning clay to use in the manufacture of clay smoking pipes. Can you give me some information that will enable me to find some within easy shipping distance?

Answer: A number of Iowa fire clays are quite plastic and if properly prepared likely could be used for pipes. Pipe clays are very plastic, fine grained and soft. One might say they are like ball clays, but differ from ball clays in that they are not sticky and they dry safely. There are some excellent soft clays in the flood plain district of Illinois and among them a pipe clay could likely be found or be prepared. The French Refractory Clay Co., Effingham, Ill., prepares a Mississippi clay which probably could be used for pipes. The Western Stoneware Company of Monmouth, Ill., may also be able to furnish clay suitable for the manufacture of clay pipes. If this clay is not as white as desired, it could be mixed with a clay from East Liverpool, Ohio.

QUESTION: We have been having some trouble with scum on our brick. Are sending you a couple by parcel post, and hope you can suggest a remedy.

Answer: The bricks sent show two very interesting types of scum.

The side cut brick has every indication of being scummed by the oil used in the cutter of the stiff mud machine.

The end cut bricks have a peculiar scum which I have experienced only a few times. It is entirely different from the scum on the side cut brick but like the latter it does not come from the clay. It is readily soluble and once thoroughly washed off, does not return. It is therefore not ordinary dryer scum. I venture the statement that in the piles it comes and goes with varying weather conditions where the coating is not excessively heavy, and also I conjecture that when the kiln is first open and still hot that it does not show but appears as the bricks cool down.

It is a long guess to explain its cause, but in the few times I have experienced it, the cause was due to wet sulphurous coal from an old mine working, pillar coal which had been exposed to the atmosphere for years before being finally worked up and put into use.

The trouble does not come from the clay but it is a salt deposited on the portions of the bricks exposed to the kiln flame, and the salt is deliquescent. On a damp day it will become less and entirely disappear where it is not excessive, only to re-appear in dry weather. I am curious to know whether it behaves in this instance as in the other few instances where I have observed it. I would be very much interested in having a full history of it, and an account of how it comes, when it comes, and how it behaves.

CAREY P. ELLIS.

GANDY COMPANY ANNOUNCES CHANGES IN PERSONNEL OF SALES MANAGERS.

The Gandy Belting Company announces the appointment of Mr. Fielder I. Schillinberg, Jr., to the position of general sales manager, succeeding Mr. Chas. H. Dankmeyer, resigned. The recently opened Chicago branch at 549 West Washington street will be under the charge of Mr. H. Milton Michel, who comes from the New York branch. Mr. Robert Crane will be in charge of the New York branch at 36 Warren street.

PRICE DECLINES.

There is a hard drive all around now to knock the top off high prices and to get the cost of things somewhere within reason and to settle down generally into more normal conditions. The clay industry fortunately will have to do less price adjusting than most other lines. Unexpected peak points in prices were reached here and there, but taking the industry as a whole, price advances were more moderate than in other staple lines and the re-adjustment will be comparatively easy because it is not expected that values of any kind will go as low as prewar levels. In a word, price declines and re-adjustments in the clayworking industries will be comparatively easy, and while the re-adjustment all around tends temporarily to check building operations there is a better feeling abroad for future business.

CHEMICAL INDUSTRIES EXPOSITION.

The Sixth National Exposition of Chemical Industries which is to be held at Grand Central Palace, New York, the week of September 25, should this year hold more than the usual interest for clayworkers. It will have three special sections. An electric furnace sections, fuel economy section, and a material handling section. The latter two are new sections which should hold special interest for the clay workers. Fuel economy is one of the country-wide objectives among the clay workers, and it should be worth the trip to the exposition to get new light on the offerings and opportunities to save fuel. The mechanical handling of material is another matter of keenest interest to the industry on which some interesting light should be obtained by visiting the exposition. The exposition is in charge of Charles F. Roth, and Fred W. Payne, and the address is Grand Central Palace, New York.

LONG-HAUL FREIGHT.

The Clay-Worker has been persistently and consistently arguing right along for more attention to the trade nearer home as a means of reducing the freight item on brick by shortening the average haul. Now we have a double reminder of the good logic of this argument. One is in the promised increase in freight rates, and the other is in some statistical reports about railroads. Right now with our railroads unable to handle with expedition the freight offered them we are being told that 40 per cent. of all railroads of the world are right here in the United States. This makes us wonder some about how the rest of the world is managing to get along, and it is a direct reminder that we are doing a lot unnecessary shipping—doing a lot of long-haul freighting where shorter hauls would serve, and would help clear up the congestion. There is too much shipping of brick from A to Izzard when it could be had just as well nearer home. Why not try selling at home as well as buying at home?

PORCELAIN FROM JAPAN.

A report from H. F. Halley, Nagoya, Japan, indicates that buyers in the United States who used to purchase porcelain in Germany are now placing orders in Japan. He claims that commission merchants there anticipate several years at least of good business from America in porcelain orders, and claims they are paying readily an advance of .250 per cent. Also that American agents for German houses are now coming to Japan for porcelain because of their inability to get supplies from Germany for their former American customers.

MEETING OF CLAYMEN OF WASHINGTON STATE.

A GROUP OF thirty, composed of local claymen of Seattle and vicinity, and members of United States Bureau of Mines, gathered at an informal dinner to hear Professor R. T. Stull discuss the ceramic work of the Bureau of Mines. The dinner was held at the Men's Faculty Club, University of Washington Campus, Thursday evening, May 20. Informal talks were given by Dean Milnor Roberts, head of the College of Mines; Mr. Oliver C. Ralston, Superintendent Seattle Station, U. S. Bureau of Mines; Doctor L. E. Shaw, Assistant Chief Chemist, U. S. Bureau of Mines, and Mr. H. E. Parmelee, Editor Chemical and Metallurgical Engineering.

Mr. Sheldon L. Glover, Geologist, Washington State Geological Survey, gave a description of the co-operative work of the State Geological Survey and United State Bureau of Mines in studying the ceramic resources of the state and pointed out the location of the various clay deposits. Over three hundred samples have been collected from various points in the state and are being tested in the ceramic laboratory of the College of Mines. This work will continue through the year and will comprise a general preliminary survey of the ceramic resources of the state, both developed and potential.

After dinner the ceramic laboratory was visited. The ceramic equipment consists of apparatus for grinding, pugging, molding, drying, firing and testing most of the common forms of clay wares.

Structural and refractory wares: Crusher, rolls, 4-foot dry and wet pan, Mueller auger machine for end cut full sized brick, 4-inch drain tile and hollow block; steam dryer and sample kilns.

Terra cotta: Plaster molds, DeVilbiss spraying apparatus, transverse and tensile strength machines, engobe and glaze materials, and ballmills.

Pottery: Patterson clay washing outfits, including double blunger, power screens, agitator, pump and filter press, potters' pug mill, potters' wheel, plaster molds and pottery kiln.

General testing: Brass molds, overflow type of volumeters, constant temperature electric dryer, gas fired fritt kiln, Brown radiation pyrometer, carbon resistance electric furnace for high temperature.

Lantern slides of the clay plants and deposits of the Pacific Northwest were then shown by Professor Hewitt Wilson, who has charge of ceramic work of this section for both University of Washington and Bureau of Mines.

Professor Stull and Doctor Shaw have been making a tour of the Pacific States inspecting the Bureau of Mines' work and ceramic conditions in general.

BRITISH POTTERY REPORT.

DURING THE first week of April nearly every works in the pottery trade was filled up with orders, but the wage dispute still remained unsettled. The operatives were inclined to accept the manufacturers' offer on general grounds, increasing wages to 100 per cent. above pre-war level, but only on condition that the numerous departmental demands for better making prices were considered by the joint committees set up in each section of the industry. The manufacturers may make certain concessions in this direction, but they are not likely to agree to refer the whole of the departmental demands to the committees. Transport of raw materials, particularly of clays from Devon and Cornwall continued difficult and increasingly costly. Practically the only means of obtaining rail-borne clay was to charter private trucks at a hiring charge of 10s. per ton; but even at this rate transport was less costly than by coasting vessel to Runcorn and thence by canal.

A joint conference of representatives of the British Pottery Workers' Society was fixed for the 15th of April, when it was hoped that a settlement of the long-outstanding wage demands would be reached. A rumor was current in the potteries that a syndicate was proposing to erect a large new factory, conveniently situated for transport and designed for mass production.

During the week ending April 17, the British Pottery Manufacturers' Federation devoted a special meeting to the subject industrial art—a distinct and, perhaps, unprecedented acknowledgment on the part of manufacturers of the importance of design to their industry. With the demand for wares so strong and as continuous as it is, and with buyers not too critical so long as they can secure goods, manufacturers might almost be pardoned a neglect of the art side of the industry. As a matter of fact, however, plenty of new designs, and better designs than have been seen for decades are being produced, for manufacturers are realizing that it costs little or no more—in fact sometimes less—to make a thing beautiful instead of ugly; that it is the shape and decoration that first attract the intending purchaser; and that good design, in combination with admitted technical perfection, is calculated to justify the high prices that are inevitable with present cost of production, and enable English wares to hold their own against cheap and inferior Japanese goods.

During the week ending April 24, shipments of pottery showed an encouraging upgrade movement, particularly to Argentina, which market is continually increasing in importance, and to France, whose home production is so limited by coal and clay shortage that an additional call is being made on English manufacturers.

Trade with the United States, Canada, South Africa, and the British East Indies, is also growing in volume. Exports to Australia and New Zealand, are, however, disappointing, and it has to be concluded that by default of British supply, the Japanese potters are gaining a firmer hold of these markets.

The sanitary ware trade has quite recovered from its wartime depression, and exports are growing steadily in quantity, while the value of shipments is approaching double the pre-war figures. The demand from the Continent and South America for sanitary ware is very strong, and though output is increasing, the factories are by no means producing up to their full capacity, owing to the fuel supplies still being inadequate.

Seventeen members of the Union Ceramique of France, including the President, M. Yeatman, of Boulogne, visited the Staffordshire Potteries recently, and made an inspection of the Pottery School. They were greatly impressed with the work being carried on there, both in the matters of study and research, and their president said the Union Ceramique were anxious for the establishment of a similar school in France.

R. C. BURTON, PHILANTHROPIST.

Zanesville's Pioneer Brickmaker Gains New Distinction by Generous Gift to the Rotary Club.

A NEW TITLE has been bestowed upon R. G. Burton, Zanesville's pioneer brickmaker, third vice-president of the N. B. M. A., by the local press of that city. The Rotarians of Zanesville have interested themselves in a splendid project, the establishment of a home for crippled children, and being an enthusiastic Rotarian, Mr. Burton and his good wife, both of whom are greatly interested in the movement, have donated to the Zanesville Rotary Club a substantial residence and twenty acres of ground in the city to be used as a hospital for crippled children. Needless to say, the local club is greatly elated over Mr. Burton's magnificent gift, and have duly dubbed him the philanthropist of the city, an honor which he bears modestly, and shares equally with Mrs. Burton.

R. C. Burton, Zanesville, Ohio.

For many years Mr. Burton has been foremost among Zanesville's public spirited citizens. As the head of the Burton-Townsend Brick Company, one of its chief industries, he has builded many monuments to his skill as a manufacturer in the form of substantial brick buildings, and it is a reasonable prediction that in due time a beautiful brick structure will be erected on the property as a permanent home for the little unfortunate wards of the Zanesville Rotary Club.

Mr. Burton's chief lieutenant, Wm. Lucktenburg, superintendent of the plants, was in Indianapolis, recently in attendance at a meeting of the R. L. Dollings Company and in response to a query, "How's the brick business in Ohio," said it was very good all things considered. "The plants are being operated nearly to capacity," he said, "and the following statement by our Secretary-Treasurer, Leo W. Fleming, gives the present status in an interesting way:

"Despite the many obstacles that have been presented this year through strikes, car shortages, and embargoes, we have not been required to shut down for one minute. Our tremendous plants have been in full operation and we have averaged better than 12,000 tons of ware a month so far this year. Thanks to our ever awake traffic department, our car supply has been most satisfactory under present conditions, and today, the Burton-Townsend Company is conceded by all brick manufacturers to be the most successful in the arrangement of their transportation facilities, and their shipments on a production pro-rate basis, are by far greater than any similar industry in Ohio.

The Burton-Townsend Brick Company's Plants.

Combined with our brick industries are five plants employed in the production of high grade moulding sand and one coal mine. Over 3,000 acres of shale, sand and coal lands are now operated. The valuable deposits owned by this company are readily adapted to our business. The supply is almost inexhaustible and will be available to this company for many years to come.

Our brick lines at the present time are: paving block—common building brick—rough face building brick—back-up building tile—radial chimney block.

The paving block of this company is found throughout the Central States, where it is carrying hundreds of miles of the country's traffic on streets and state highways. Our block never fails to stand the quality test, a requirement of the state highway commissions. It is recognized by paving contractors and engineers as the most substantial and dependable of paving blocks.

The development of the face brick industry of this company has been rapid and encouraging. Today our "Rainbows" and "Lake Shore Mingled Reds" enjoy the distinction of being one of the most beautiful and artistic rough texture face bricks on the market. Our Rainbows combine all the harmonious shades of the oriental rug; the incomparable beauty of the ware is unsurpassed. Its rough texture is different in style, and meets with instant favor. Our Lake Shore Mingled Reds blend from a cherry to a deep ox blood red. A more beautiful rough texture solid color red brick cannot be found. The distinctive individuality of our face brick commends it to the critical, who demands exclusiveness as well as the highest order of artistic beauty. Architects and builders are quick to recognize the superior quality and superlative degree of perfection of our product.

A wide distribution has been established East of the Mississippi River to the Atlantic Coast, and South to the Ohio River. Leading dealers in face brick represent us in the territory outlined. Shipments are now being made as far as Duluth on the Northwest to Boston and New York City on the East, and Cincinnati on the South. Recent inquiries from North Carolina, Georgia, Florida, Louisiana, and Texas express the desire to handle our ware.

The popularity of our face brick has left but one solution: —Restrict the territory or increase the capacity of our plants to meet the trade demands.

The company enjoys a very large business in the balance of its clay products, and shipments are made everywhere in these universal commodities.

The strata of moulding sand in Muskingum County, Ohio, by tests of The United States Geological Survey Commission is one of the finest sands for moulding and casting purposes in the United States. This company enjoys a large business in this commodity, and embraces a clientele of large manufacturers.

This company is now producing a fine moulding sand for the purpose of casting bronze, brass, aluminum, and other finer castings, which has been pronounced by "The Bureau of Standards" and "The Geological Survey" as the nearest approach to the French moulding sand yet submitted to them for analysis. Sand for the casting of finer metals has always been imported from France. Our company now enjoys a good portion of this business.

The coal mine of this company consists of some 2,300 acres of coal deposits. The mine is electrically equipped throughout, and inspection by The Ohio State Department of Mines has now placed our mine as the best equipped and conditioned in the Southern District of Ohio.

Our capital stock is $3,500,000.00. We employ in the neighborhood of 500 men. Our gross shipments can be better demonstrated by the following approximate figures:

Brick 16 cars shipped daily—4,800 cars annually
Sand 8 cars shipped daily—2,400 cars annually
Coal 6 cars shipped daily—1,800 cars annually
Total 30 cars shipped daily 9,000 cars annually

Our tremendous plants are now running at full capacity to meet the urgent demands of our trade. At the present time we have on our books orders which we are behind in filling to the extent of approximately 50,000 tons, and we look forward to the coming year as the banner year in our history."

ENRICHMENT OF CONCRETE SURFACES WITH CLAY TILE.

A man in Babylon once made a brick, and those who followed him have been making them the same shape ever since, says J. H. Donahey in January Concrete. After burned clay came concrete. Concrete, however, is much more workable and plastic than the brick in its present form. . . . It can be molded into the most delicate and artistic shapes, its very nature permitting application to almost any form.

But like the artist who stands before his gray canvas, after having outlined his intended picture, we feel that color is needed to offset the gray and uninteresting flat tones, so we go back to burned clay, the sister pigments of nature, to make the picture complete. The soft gray tone of cement is beautiful if complemented or balanced by any other natural material—and what is better than burned clay with its great variety of warm, natural colors, elements of the earth? Too much of either is not as interesting, for we see it everywhere at every turn. On the other hand, a happy blending of both is very pleasing to the eye.

Little or no attention has been paid to the union of these two materials, for the fact that much time and interest have been given to produce a strong, workable structure at the lowest possible cost, with but slight regard for the appearance of the finished object. It is for this reason that we hear criticism of concrete constructions. They are unfinished. They need color, and I venture to say, with the proper balance of these two of nature's products, combined with a proper conception of design, what looks now like a cheap poured product would take on the appearance and dress of a perfect palace in comparison, if properly treated with clay ornament.

If you talk to the tile manufacturer he will say it should be all tile; the brick manufacturer will tell you that brick is the material for your structure. The concrete man can pour it for you while the other two are thinking about it. In some cases all of them are right; but the architect knows that if he could have at his command these three mediums he would choose concrete with clay ornament, for it is so plastic that it lends itself to his every purpose. The concrete permits of good architectural lines, and the natural burned clay has unlimited, elastic possibilities, both combining in a harmonious unison.

Some tile manufacturers have made a careful study of this situation and have evolved and produced ornament for this very purpose, knowing full well that concrete needs this finishing touch.

Tiles are now being made under a new method, which allows of greater elasticity and economy in setting, thereby reducing the cost of construction, a factor that has heretofore had much to do in preventing this union of necessity and art.

Under the old plan it took much time and expense to inlay each little tile separately, but ornament is now being made, one might say, by the yard, in all the colors of natural clay and of almost every design desired. It has now become a very simple matter to tile in any panel or border or to place an insert of this material.

When the architect once gets before him these two servants, working side by side, it is a fair prediction that concrete will take a far greater position of worth and merit among the other building materials.—Exchange.

HOW THE AUTO TRADE AFFECTS THE BUILDING INDUSTRY.

Many problems are now confronting the building trades which have never had to be considered before. Take plate glass, for instance. Approximately 100,000,000 feet of plate glass are turned out every year, of which 75,000,000 is used by the building trades. A good idea of the extent of the disruption which has been made by the automobile trade may be had when it is known that the auto trade has already contracted for 40,000,000 feet of plate glass this year and wants even more.

INTERNATIONAL TRADE PAPER AT COBLENZ.

We are in receipt of announcement of the organization of the International Trade Publishing Company, 27, Casinostrasse, Coblenz, Germany, who publish a trade paper, the purpose of which is to develop international trade. The announcement says that the new publication, The International Observer, is published by Americans and its purpose is to present conditions in Germany and other countries, especially those which have bearing upon international trade.

THE SHORTAGE OF BRICKLAYERS IN ENGLAND.

Because of the scarcity of bricklayers in England our Consular reports tell of a temporary ban on what is termed luxury building so that all the available help may be had for home building and other essential construction. Alexander Taylor, chairman of Building Control of the London City Council is reported as estimating that if any effective house building is to be carried on it will require at least 45,000 skilled bricklayers. It is estimated that in England there is available 50,000 trained bricklayers as against 100,000 before the war. This should serve as a warning to us in this country and as a reminder that we should keep busy at training young men as bricklayers, for with the increasing use of brick and hollow tile in construction work we, too, are facing the handicap of shortage in skilled labor which will likely grow more acute unless some efforts are made to train new men.

WESTINGHOUSE EMPLOYES' STORE PROVES SUCCESSFUL.

Nearly a quarter of a million dollars in cash sales was handled by the Employes' Store of the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., in the first five and a half months of its existence.

According to a report just issued by J. E. Bonham, secretary-treasurer of the Co-operatice Buying Committee of employes, the total sales amounted to $226,673.02. After expenses for the period were deducted there remained a surplus of $11,550.90, which is being used as a working fund.

The Employes' Store has been in operation since October 18, 1919, selling merchandise practically at cost to workers. It is the intention to enlarge the capacity of the store as the patronage of the employes warrants.

Business was transacted in grocery, tailoring, shoe and miscellaneous departments, more than nine-tenths of the total sales being made by the grocery department. The tailoring department sales totaled $8,112.91, the shoe department sales were $6,341.85 and $9,665.57 was obtained in sales of miscellaneous goods.

THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Southern Brick Plant to Burn With Crude Oil.

Editor The Clay-Worker:

Our charter was approved last September, with $50,000, of which $40,000 was paid in cash. We have built a modern plant for making dry pressed brick and intend burning same with Mexican crude oil. We are starting with one press, 20,000 capacity and if we do well with our first kilns, we will double the capacity during the summer.

There is a great demand for brick in this section and a number of plans are being delayed for want of material. As we will have to burn the brick for our permanent kilns in green kilns, it will be about two months before we have any brick for the market.

F. L. CAMPBELL, Sec'y.-Treas.,
Yours truly,
Greenville, Miss. Delta Brick & Tile Co.

W. E. DUNWODY, VICE-PRESIDENT OF N. B. M. A. RETURNS FROM A TRIP TO EUROPE.

Editor The Clay-Worker:—

I am back home much improved by my short trip across the water. My son, who you know was in service during the war, accompanied me, and it goes without saying that we had a fine time together. Our time was limited so we did not attempt to investigate any of the brickmaking interests either of England or France. My main object in making the trip was to get a rest. In that respect, it was a great success and I am now "fit" for a strenuous season. I enclose a clipping from our local paper giving a breezy account of our experiences.

Macon Party Has Interesting Experiences on Tour; Pay Visit to Battle Area at Verdun.

Trying to "tip" a member of Parliament for his services in showing them over the structure housing Great Britain's supreme legislative body was one, but not all, of the experiences had by a party of Georgians, composed of W. E. Dunwody of the Standard Brick Company, Macon; W. E. Dunwody, Jr., of Dunwody & Oliphant, architects, also of this city, and Wilder Glover of Marietta, who recently toured England and France.

These travelers braved the inconveniences of congested, post-war tourist accommodations, struggled with a sorely deranged and deflated currency, visited the scarred battlefields around Verdun and listened to the hair-raising stories told by a Cook's guide, and finally vacated Paris prematurely in order to give the May Day celebrators all the room they needed for a concentrated strike.

The experience with the member of Parliament came about in this way: It was the last day of the party's stay in London, and being Friday, the Parliament houses were supposed to be closed for visitors. The Americans were told that if they managed right they could gain an entrance. Forthwith, they went to the legislative halls, where they told the first guard they met that they were sailing for America the next day and were very anxious to get a glimpse of the famous place. The guard promised to do what he could for them.

As they passed from one hall to another they overheard another sight-seeing party, offering to give crown pieces to all the guards they met. A man who seemed to be waiting for another sight-seeing party, offered to take them about over the place if the others didn't soon show up, and commented on their good fortune in obtaining an entrance. The other sight-seers did not appear, so their volunteer guide took them over all the parts of the Parliament buildings.

"Take Back Your Gold."

When the trip came to an end, the Georgians shook hands with their conductor, and attempted to reward his services as they had done others. At this the guide looked greatly disgusted, and refused the money with an aggrieved dignity. Just then his friends came up, and rather than embarrass him, the three parties from Georgia left at once. As they were going out, one of the guards commented, "You gentlement were lucky today to have a member of Parliament show you through." When the three had learned the name of the law-maker, they wrote him a courteous note of apology and thanks, to correct what impression he might have gathered of "those mercenary Americans."

W. E. Dunwody, Macon, Ga.

Going over on the boat, the Georgia "crackers" gave another British lord the "willies" one evening. The band had been playing old time airs, when it suddenly drifted into Dixie. Without warning to the other passengers, the Georgians raised a yell. The lord sitting nearby made a considerable rise himself, unaccustomed, as he was, to such vocal demonstrations.

Forced to Search for Rooms.

Arriving in Paris two days earlier than they had expected, and therefore two days before their hotel reservations were effective, the Georgians spent some time taxi-ing about from one hotel to another, hunting a place to stay. At last a friend, who had been going to Paris annually for the last twenty-five years, secured for them an apartment at fairly reasonable rates.

They spent one week in the environs of Paris. Intending to take in France via the high spots and make a rapid, comprehensive tour, they were prevented by railway conditions from carrying out their purpose. Tickets on a train did not guarantee a seat at all, and there is little standing room in French railway cars.

Whereas W. E. Dunwody, Jr., who had previously visited France with the overseas forces, could, during the war, get only five francs, seventy centimes for one dollar in American money, it took sixteen francs, ninety centimes, or almost three times as much, to make a dollar for the post-war tourists. There was scarcely any silver to be had. The currency was mainly certificates and stamps, largely the latter. Practically all the silver had been melted back into bullion, as it was worth more in that shape than in coin.

In spite of this, the travelers did not find prices much higher than they were during the hostilities. At places frequented by French people, where no specialties were offered for tourists, a good meal could still be obtained for two people at three or four dollars. Only at the places with famous names, such as the Cafe de Paris, Ciros or Maxims were prices infinitely higher than in this country.

Paris was not as gay as it was immediately after the war, they observed. On account of the coal shortage, practically everything in the city, noted for its nocturnal gaiety and brilliance, closed down at 11 p. m. Uniforms of all sorts were notably absent, the men seeming to have adopted "cits" with one accord. Another conspicuous thing to the Americans was that girls, and even old women, in Paris were wearing their skirts up to their knees. Heels seemed fully four inches high, and with great, wide hats, the Parisians seemed to one of the sightseers "top-heavy."

Pay Visit to Battlefields.

One day was spent on the battlefields around Verdun. On the way there, the Maconites, in tow of a Cook's Tour guide, passed through Chateau-Thierry and along the outskirts of the Argonne. They had lunch in a building which had been practically demolished by shell fire, but which had been hastily equipped with a roof to accommodate the great inflow of tourists. By automobile, they gained the forts which had been used in the defense of Verdun.

"I thought I recognized some of the same territory I had traversed in the days of 1918," the ex-soldier member of the party related yesterday. "The whole landscape was greatly changed, however. Most of the shell holes had been covered up, and the fields were nearly all planted. Decidedly more progress has been made in agriculture than in building. The French build slowly. A number of houses and edifices were being restored. In every case the pieces of stone were being carefully matched and perfectly fitted into place. I saw twelve men lifting stones from the ground to the second story of a building, which in this country would have been raised in half the time by three men with a hoist. Practically everything in Verdun was demolished.

"A person who had never seen the front would get a pretty good idea upon visiting it now of the appearance during the war. Many hand grenades and other traces of war are still lying about. The guides are very particular about members of their party handling the hand grenades. I picked up one and our guide made me put it down in short order.

One of War's Stories.

"We came to one place where there were guns and bayonets sticking up out of the ground. The guard told us a hair-raising story of how a company of soldiers had been buried alive by an explosion. They were buried there, standing straight up, the guide declared."

But for the threatened May Day strike, causing a tie-up of trains, taxicabs, restaurants, meat shops and groceries, the party would have remained in Paris longer, but as it was, they rushed, together with large crowds of other sightseers, away from France the morning of April 30. They had to stand up four or five hours on the way to the channel on account of the packed trains, and could get no seats on the boat crossing the channel.

The large percentage of women in the London population struck the trio throughout their stay there. Women were holding all kinds of positions, particularly in the hotels. Many of them, they stated, were "rearing" to come to America. The party attended the reopening of the theater, which was the scene of a riot when Laurette Taylor played in the first performance of "One Night in Rome."

"We were well treated in both countries," Elliott Dunwody, Jr., affirmed, "contrary to some of the reports which are being brought back to this country, there was absolutely no show of ill-feeling toward Americans, so far as we could see. The treatment accorded us was especially cordial in France.

Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

Title registered, contents copyrighted.

THIRTY-SEVENTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " "	10.00
Ten copies, " "	15.00

Foreign subscriptions 65 cents additional.

☞Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to

226 East Ohio St. T. A. RANDALL & CO. [Inc.], Indianapolis.

Vol. 73 · June, 1920. No. 7.

CURRENT COMMENTS.

Be a self starter.

* * *

1920 will go in history as the year of great advertising.

* * *

The place to begin pushing production is with your own self.

* * *

Clays, like men, may look somewhat alike and act considerably different.

* * *

Success is often won by breaking rules, but that is no excuse for willful disregard for them.

* * *

It is not easy to comment upon what has been doing in coal and do the subject justice with polite language.

* * *

Here is hoping that the presidential campaign may be kept free from mud slinging and that the next president may be a brick.

* * *

The best eradicator of ignorant competition is that form of education which comes from rubbing shoulders and swapping experiences with your competitor.

* * *

When a man makes a reputation for his product he knows it and should value his product higher as a result. Also, he should seek to maintain that reputation unimpaired because it is valuable.

* * *

Between common brick, face brick and hollow tile there is promise of much new development in the ornamental features of architecture. This is as it should be because one great cry and plain need has been for more variety in the architectural offerings in clay products.

* * *

After all, whether you win or lose in the game of life, it is how you play the game that counts for quite a lot.

* * *

Daylight saving may still be a desirable thing to argue for, but money saving is a much better subject for discussion and action.

* * *

If you regard a duty as a duty as long as it is a pleasure to you to do it, your sense of duty is not worth much as a guide to right doing.

* * *

Given a good clay property to start with the essential things for its development are, knowledge, enterprise, money, and a possible market within reach.

* * *

If those who have been telling us that money is cheap will just go over to the bank right now and try to borrow some money they will get a new idea and probably discourse on usury.

* * *

Some of those who are getting prices for summer board for the rest period in the country may conclude that the more practical plan for a vacation is that suggested by the U. S. Department of Agriculture, to spend it on the farm helping with the farm work.

* * *

While the modern advertising authorities persistently preach truth telling, the thing they are really thinking about is those truths which will help sell the product. There is no keen disposition on the part of the most upright man to exploit truths which might handicap sales no matter how evident and how easily found they may be.

* * *

While motor trucks are a plain necessity, and automobiles are a mixture of necessity and luxury, there is growing up in the land a pretty general feeling that between the makers of autos and accessories there has been more disturbance of the labor and raw material situation than from any other source and that some curtailment here will have a good effect on the industries of the country generally.

CLEARING THE TRANSPORTATION TANGLE.

There are some indications that we are gradually clearing up our transportation tangle and getting in better shape as far as shipping is concerned. People of this country will solve this problem as they do other problems confronting them. It is just a matter of time and interest, and the more interest shown the less time it will take. It is evident that railway managers are exerting themselves and it is up to the shipping public to do its part. This means cars should be loaded to capacity, loaded and unloaded in the shortest practical time so as to release them promptly. And to help in this as well as to relieve terminal congestion a free use of trucks for terminal work and short distance shipping will help considerably.

A GOOD SPIRIT.

There has long been a spirit of good will in the matter of exchanging ideas in the clayworking industry that is now becoming more widespread because the industrial world has realized its advantages. Today it is a common thing for a business man to exchange his good ideas and plans with those of another so that they may both make good progress. One of the outstanding characteristics of the clayworking industry even in the days when many other industries were surrounded by secrecy was the freedom with which one manufacturer would take another through his plant and show him how things are done. That is the spirit which has been fostered and encouraged by the N. B. M. A. conventions, until today when a new machine or idea is out and some clayworker is induced to try it, others go visit him, watch the experiment and learn about the new idea. It is a common thing these days to see one clayworker visiting another seeking information and new ideas, and the good spirit in the industry which promotes this is a shining example to other industries which have been slow to make use of it.

VACATIONS AND PRODUCTION.

One thing that every busy man needs and is entitled to is a week or two of vacation during the dog days. An ever present question is how to get vacations without hampering business and production. It is really a test of a business organization. In a properly organized business or industry it should be practical for any man from the manager down, or even for several men, to be absent and the business and work go ahead without a hitch. This is a little more difficult in the clay industry because of the technology and training qualifications required. However, it is often practical of attainment even here. The idea to work on is that of having an understudy for every man in the business from the manager down. This not only makes it easier to take out for vacation time, but is the logical safeguard and development which should be a part of good business policy.

RESEARCH AND KILN BURNING.

As pointed out in the report of the Committee on Techincal Investigation made at the annual convention by Prof. A. V. Bleininger, there is room for some effective research work in connection with questions involved in burning brick and other clay wares. There is the question of the actual amount of heat required, heat transmission, heat losses, and the maximum speed at which clay products may be heated without injury. The possibilities of development here through research work are great, and the advantages are, that if properly carried out in this way the information becomes standard in its authenticity and is made available for everybody. The carrying out of such work takes time and money, but surely no man doubts that it will be well worth it.

BIG BRICK CENTERS—CHICAGO.

Broadly speaking the larger cities of the country are the most important consuming centers of brick and other clay products. Naturally therefore there grows up in around these larger centers a producing of clay products somewhat in keeping with the needs of the larger center itself and the shipping territory tributary thereto. Thus New York is the greatest brick consuming center and in the Hudson River Valley and other points tributary thereto we have had developed a wonderful production of building brick. Chicago, the next city of importance, is likewise the next center of brick production. The Chicago consumption at present will approximate a billion brick a year and most of these, especially the common brick, are produced within a radius of 35 miles from the heart of the city. Face brick and hollow tile are brought in from longer distances, but there has logically developed in and around Chicago itself a wonderful brick industry. And the thing the Chicago trade prides itself on is that it has held brick prices in Chicago down to practically the lowest point of any center in the United States. In other words, notwithstanding extravagant wages the country over, and that Chicago itself has been bitten as seriously by the high wage bug as any center in the country, they have persistently held prices of brick down to a point where no charge of profiteering could be sustained, and where it should encourage a continuance of building operations and a wider use of brick. This is good work and we are glad to chronicle the achievement.

SEPARATING SEWER PIPE SPECIFICATIONS.

One of the things scheduled to come out of the meeting of the American Society for Testing Materials at Asbury Park, N. J., June 22-25, is a separating of the specifications of clay and concrete sewer pipe. At least that is the idea contained in the report of Committee C-4, which has this matter in charge. That is as it should be, for clay sewer pipe properly stands in a class by itself. There are some tentative revisions offered in the specifications for clay pipe, one of which is that the maximum allowance for absorption shall be 8 per cent.

BRICK WALLS AND MOISTURE.

Somehow there has gotten abroad in the land a too general impression that brick walls are lurking places for moisture and that a brick home means dampness and disease. There is a job cut out here for the brickmakers of the country to eliminate this impression both by preachment and practice. An improperly built wall is a bad advertisement for the brick industry and steps should be taken to set forth clearly what constitutes a good dry brick wall. Then the industry should strive to have all brick walls properly built. There are a number of interesting questions involved here worthy of active attention, and meantime there is some educational exploitation work needed to disabuse the mind of the public in this matter of brick walls and moisture.

YOUR MACHINERY FUND.

In these days when we are preaching and striving to practice individual thrift is a good time to concentrate a little more attention on the matter of business thrift. This is especially in the matter of setting aside and providing a fund with which to buy the machinery. The machinery requirements of a plant should be properly appraised to start with and from time to time during its use. Then some normal life period for each machine should be taken as a basis for figuring depreciation charges. Depreciation should be charged off each year before any profit dividend is declared. That is only a part of it however. The amount of this depreciation should be set aside as a fund available for the upkeep of equipment and the buying of new machines. This is the sort of business thrift we need to practice. There has been too much charging off and wearing out and not enough proper setting aside of a specific fund to replace machines. The man who practices the right kind of thrift in his business and who will set up a fund of this kind will find it easy to keep up to date and buy new equipment when it is needed.

SAMPLES AND DISPLAYS.

Display is a big factor in business. This is an acknowledged fact. Manufacturers of brick and of tile may at times feel like the furnishing of samples is something of a nuisance, and also at times agents receiving samples may be neglectful about setting them up and displaying them advantageously. It takes some time, trouble, and costs some money to keep up sample lines and to make proper displays of clay products, but it is one of the most effective selling agencies. Therefore, if instead of going about it grudingly those in charge of the work will take it up enthusiastically and feature it stronger they are likely to get better results and in the end feel better about their work. Showing goods is the way to sell goods. One of the best demonstrations of this is in the big growth of our 5 and 10 cent stores founded upon the policy of making goods sell themselves through open display. What we need in the brick and tile business is to change our attitude somewhat in the matter of samples and display, and to look upon it as an opportunity rather than as a burden. It is an opportunity to attract attention and to develop business. Also a good way to improve it is to surround brick displays in sample rooms with attractive pictures of brick homes that have been built.

"THE ABIDING CHARM."

One of the phrases developed by some of the publicity folks in connection with brick is "The abiding charm of a house of brick." This is not only catchy and interesting, but it carries an impressive truth. One of the strongest features about the burned clay product is its ability to abide, its permanency and ability to stand the test of time and the ravages of the elements. So if there is charm about a brick house in the beginning it just naturally abides with it throughout the ages.

BUSY TIMES FOR THE BONNOT CO.

Not since the cessation of the war hostilities has the plant of the Bonnot Manufacturing Co. hummed so with industry as the present time. This was the statement this week of A. A. Oldham, secretary and treasurer of the concern. Engaged chiefly in the manufacture of brick, pottery, clay and cement making machinery, the big plant is being taxed to its utmost capacity in order to deliver its product on time. The railway congestion, according to Mr. Oldham is easing up considerably and much raw material, at least enough to insure steady run of the factory has been forthcoming. "We have little complaint to make in these times of adverse conditions," Mr. Oldham said. The Bonnot Co. according to officials is better off than the majority of Canton manufacturing plants, and operation is being only slightly interfered with by the inability to get coal and other raw material. Every department of the big factory is busy and clayworking machinery, for which there is a big demand at this time is being turned out with but little delay.

JOHN BOYLE, JR.
Attorney-at-Law
PATENT
Ouray Building,
Washington, D. C.
16 years on the examining corps of the United States Patent Office.

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.,

required by the act of Congress of August 24, 1912, of The Clay-Worker, published monthly at Indianapolis, Ind., for April 1, 1920.

State of Indiana, County of Marion, ss:

Before me, a notary public in and for the state and county aforesaid, personally appeared Theo. A. Randall, who, having been duly sworn according to law, deposes and says that he is the editor and business manager of The Clay-Worker, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

That the names and addresses of the publisher, editor, managing editor and business managers are:

Publisher, T. A. Randall & Co., Inc., Indianapolis, Ind.
Editor, Theo. A. Randall, Indianapolis, Ind.
Managing Editor, none.
Business manager, Theo. A. Randall, Indianapolis, Ind.

Owners are T. A. Randall & Co., Inc., Indianapolis, Ind.; Theo. A. Randall, Theo. B. Randall and James E. Randall, Indianapolis, Ind.

Known bondholders, mortgagees, and other security holders. holding 1 per cent. or more of total amount of bonds, mortgages. or other securities: None.

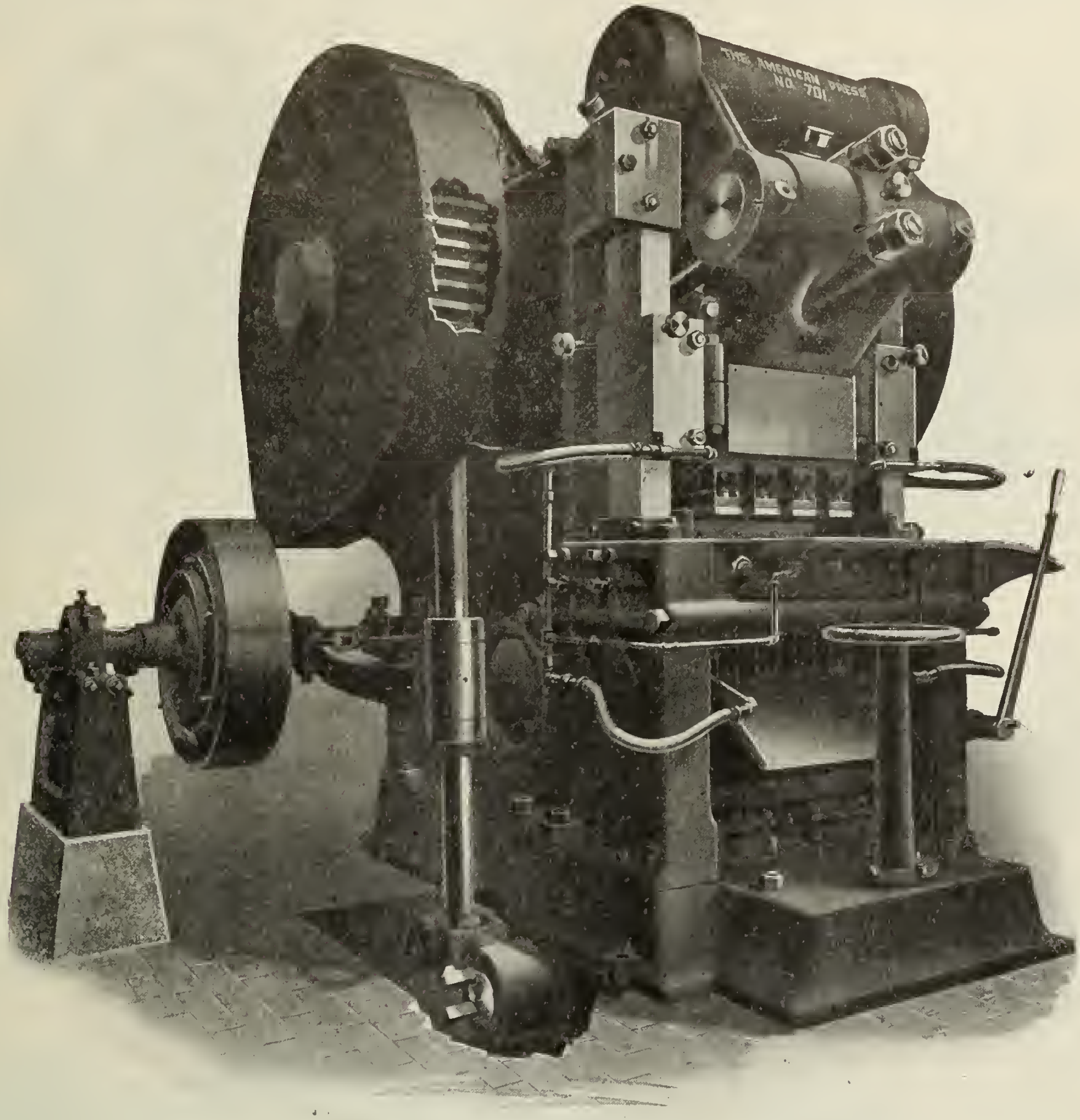
That the two paragraphs next above, giving the names of the owners, stockholders, security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Signed) Theo. A. Randall, Editor.

Sworn to and subscribed before me this 29th day of March, 1920.

(Signed) CHRISTA A. LEWIS, Notary Public.
[Seal] My commission expires June 30, 1921.

American No. 701 Press



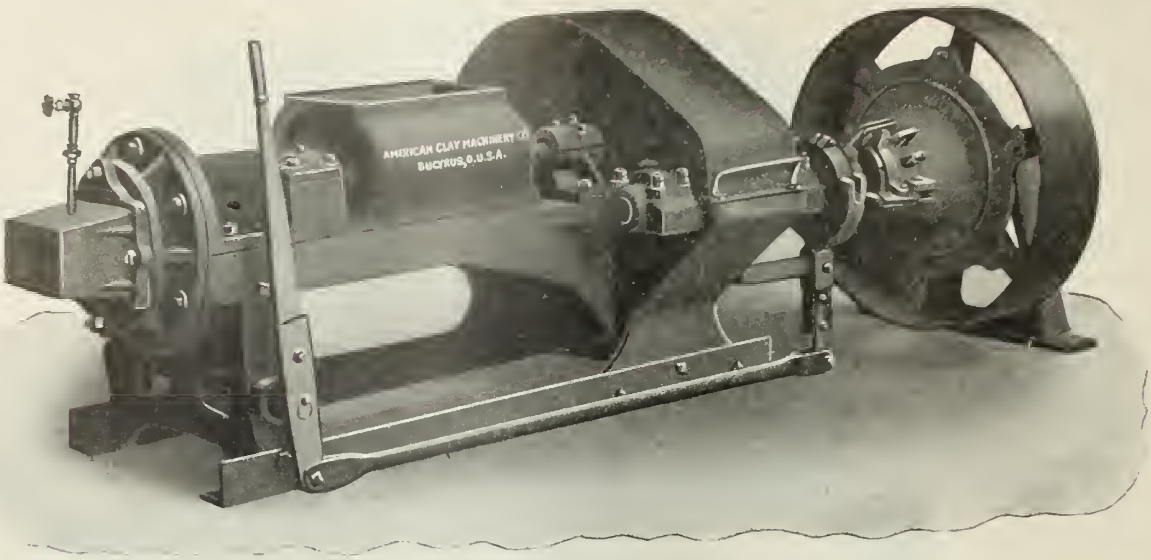
American No. 701 Press

This is a modern machine. All late developments are embodied in its construction. It has the great strength that steel construction gives. It is simple, easy-running, efficient. The semi-steel gears are shrouded for protection. The pinions are steel. The working parts are semi-steel. There are ample toggle pins, side bars and bearings. Every strength feature has been accounted for. Get the bulletin—No. 701, and note the details of quality. We build everything a clayworker needs.

The American Clay Machinery Co.

Bucyrus, Ohio, U. S. A.

American No. 328 Auger Machine

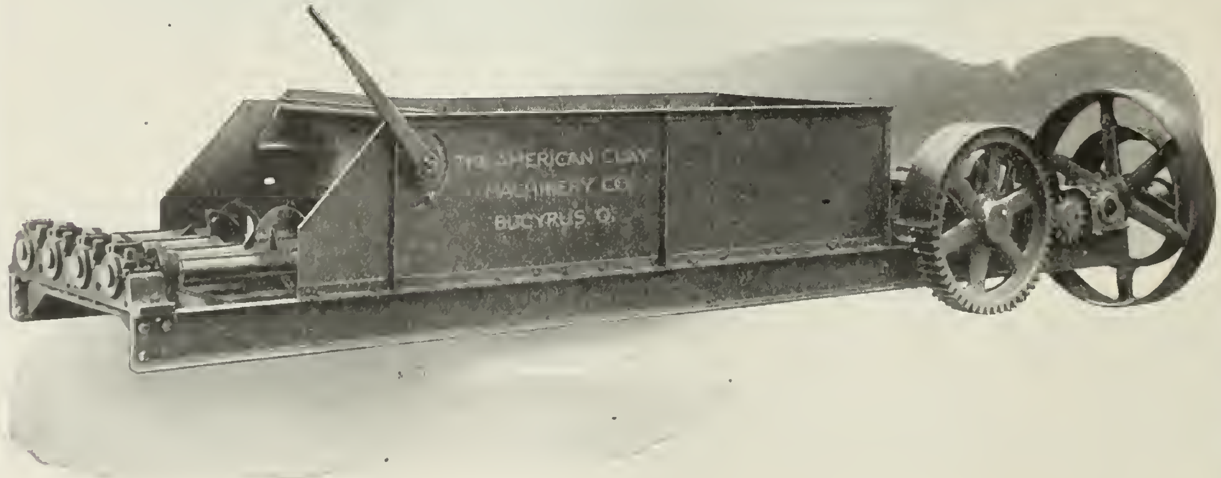


American No. 328 Auger Machine

The American No. 328 Auger Machine is a general purpose machine, replete with details of excellence. You couldn't do better than to install this machine if a capacity of 1,000 to 2.000 brick per hour will meet your needs. It's doing better than that in many places, but that's what we claim for it. Get the No. 328 Bulletin.

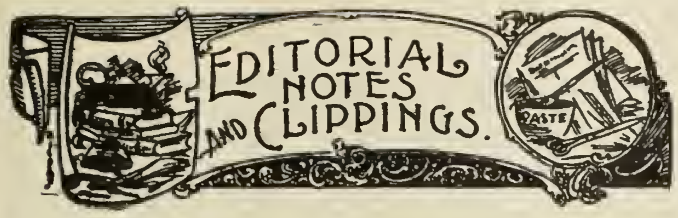
American No. 274 Conveyor

There never was a better conveyor built than the American No. 274. It has many attractive features, but above them all and paramount in importance is capacity, simplicity, efficiency and durability. Send for Bulletin No. 274 for details of construction.



The American Clay Machinery Co.

Bucyrus, Ohio, U. S. A.



EDITORIAL NOTES AND CLIPPINGS.

T. W. Hentz, of Red Level, Ala., is in the market for machinery for a brick and tile plant.

Ben W. Hearne, of Palestine, Texas, advises us that he would like to correspond with manufacturers of brick and tile machinery.

Benjamin F., William A., Robert and Irvin Smith, have incorporated the Roberts Clay Co., of Clay City, Ind., with $15,000 capital stock.

C. Spangler, E. I. Terry and Kester Callaway have organized a company at Peterson, W. Va., and will erect a plant to manufacture brick.

The Houston Brick & Tile Company, of Houston, Mo., has been organized and a plant will at once be built for the manufacture of press brick.

O. M. Booher, is the manager of the Kokomo Brick Company of Kokomo, Ind., succeeding E. L. Danner who has been with the company for some time and is leaving July 1 to enter another field.

The Weirton (W. Va.) Brick & Tile Co. has been granted articles of incorporation. Those interested are Fred and N. Flesher, John and Esther Oldroyd of Weirton and Wade H. Brown, of Janelew.

B. C. Keeler, of the Mason City Brick & Tile Co., Mason City, Iowa, recently closed a deal for 110 acres of land at Nevada, that state, on which he will erect an immense factory for the manufacture of clay products.

The Riverside Clay Works, of Knoxville, Tenn., of which J. W. Dooley is chief owner, which was started the middle of May, is now running smoothly turning out 40,000 brick per day. Later on they expect to make hollow building tile and drain tile.

M. E. Gregory, of the Brick, Tile & Terra Cotta Co., of Corning, N. Y., writes that they have been having some trouble on account of coal shortage, but the plant is now running full time. They are having a good demand particularly for terra cotta for which they have established quite an enviable reputation.

The Matheson Products Company has been organized to establish a brick and tile manufacturing plant at Matheson, in the northern part of Ontario, Canada. The company has a tract of one hundred and ninety acres, containing a clay deposit forty feet deep. R. S. Potter is president and R. L. Oilman, manager of the company.

The Phoenix Clay Corporation, of Bridgeport, Texas, has been incorporated with $200,000 and will build a large brick and tile manufacturing plant at that place. C. W. Martin, of Dallas, Texas, is president, and Eugene Debogory, of Dallas, secretary of the company. The plant is to have a capacity of 125,000 brick, or 150 tons of building tile, per day.

The property of the Trimble Paving Brick Co., consisting of the plant in Glouster, Ohio, and the one at Trimble has been sold to The Hisylvania Coal Co., by the receiver at the company's bid of $50,000. The plant in Glouster will be operated by the coal company and work will be commenced at once getting the property in shape to make brick. Will Rustin and James Rustin of Athens will manage the plant for the Hisylvania Coal Co.

A group of Martinsburg, Washington, Philadelphia and New York men have organized the National Shale Brick Company, which will erect and operate a large plant just east of Martinsburg, W. Va., for the manufacture chiefly of building brick, but also tile, sewer pipe and other clay products. It is capitalized at $250,000. The officers are F. Vernon Aler, of Martinsburg, president; Tracy L. Jeffords, of Washington, vice president; Charles Lohr McGee, of Washington, secretary; Mr. Jeffords and Decatur H. Rodgers, of Martinsburg, general counsel; Mr. Aler, treasurer, and these, together with James H. Dawes, J. Harry Cunningham, James H. Dyson and Edson W. Briggs, directors.

The Okmulgee Brick Company, of Okmulgee, Okla., has been incorporated with capital stock of $600,000.

The Amarillo Brick & Tile Company, of Amarillo, Texas, of which W. C. Pope is manager, is in the market for machinery for a still mud brick plant.

The Southern Idaho Brick & Tile Co., of Twin Falls, Idaho, has been incorporated with $50,000 capital stock. Jacob Mattson, Groven M. Pugh and J. A. Johnson are interested.

E. Agnew, of New York City, is at the head of a number of men who have incorporated the Builders Union Brick Mfg. Co., of Manhattan. The capital stock of the company is given as $150,000.

The plant of the Western States Porcelain Co., at Richmond, Cal., was completely destroyed by fire the latter part of May. The fire is supposed to have started from a spark from a passing switch engine.

E. E. Jones, A. N. Wilcox and Joseph W. Watson have purchased a tract of land at Craig, Colo., on which they will establish a brick manufacturing plant. They will start on a small scale and enlarge as the demand justifies.

The Wilburn Tile Company has been organized as a subsidiary to the Fraser Brick Company of Dallas, Texas, of which W. B. Fraser, is president; J. H. Payne, vice-president and general manager and J. L. Ryan, secretary-treasurer.

The plant of the Castanea Brick & Tile Co., at Castanea, Pa., has been overhauled and aagin put in operation under the direction of W. W. Swengel, superintendent of the works. George E. Prindible is at the head of the new company which took over the plant some time since.

The McAdoo-Waddell Brick Company has just been organized at Nashville, Tenn., for the purpose of manufacturing brick, and will begin operations at once. The following compose the new firm: R. J. McAdoo, John Waddell, W. H. McAdoo and L. H. McAdoo. It is one of the strongest enterprises in this section.

The Corry Brick & Tile Co., of Corry, Pa., has been experiencing some difficulty in getting a sufficient quantity of coal to keep going steady. In spite of the energetic efforts on the part of the manager, D. Warren de Rosay, they were compelled to close down for a short time in May, but the plant is now in full operation again.

The Aluminum Company of America has about completed its big brick plant at Maryville, Blount county, Tenn. The plant, as it now stands has a capacity of 60,000 bricks per day, but only 25,000 will be the initial output, all of the burning kilns not having been completed. The company for the next few months will use all the output from the plant but about Oct. 1 others will be supplied from this plant.

The management of the Farmers' and Merchants' Brick & Tile Company, of Marshalltown, Iowa, has been taken over by Anton Vogt, who has been located at St. Mary's, Pa. for some time. Mr. Vogt will have associated with him two of his sons, Jacob and John, and his son-in-law, Frank Simlick, the latter of Detroit. Mr. Vogt has purchased a half interest in the plant which has been idle for a couple of years. He is an expert brickmaker of many years' experience and will no doubt be successful in his new venture.

The Alabama Clay Products Company has started work on its new plant near the northeastern limits of Birmingham, Ala., for the manufacture of fireproofing. The plant will have connections with the Louisville and Nashville Railroad and will be on the new Lewisburg and Birmingham asphalt road. Thorough tests have been made of the shale and clay deposits and they have proven their qualities in different plants, notably the Birmingham Clay Products Company. Besides the clay and shale deposits, there are also three veins of coal on the property. The plant is to have the most modern equipment, including railroad tunnel kilns. Eventually the concern proposes also to manufacture a building block. This will be of special design and will be intended for exterior building purposes. The managers believe this will prove very popular in the building trades. Another important product will be silos. The hollow-ware fireproof clay products is becoming more and more popular in the erection of silos. The new concern will turn out a product specially adapted to that end. Harry Watkins, for a long time associated with Charles

D. Smith in the manufacture of fireproofing at North Birmingham, is president of the new company and A. S. Holberg of New Orleans is vice president and treasurer.

The Monroeville Clay Products Company is erecting a $500,000 plant at Vermillion, Ohio, for the manufacture of clay products.

Work has started on the immense new plant of the American Clay Products Company at Lambertville, N. J. The company has a large tract of land containing splendid clay deposits.

The business men of Mexico, Mo., have organized a company to be known as the North Missouri Fire Brick and Clay Company, with a capital of $40,000 and will build a plant at Farber.

The Big Savage Fire Brick Company is making extensive improvements at its plant at Zihlman, a suburb of Cumberland, Md. They hope to make the plant one of the largest in the state.

The Amherst Brick Co., of Springfield, Mass., has been organized with $60,000 capital stock. Charles M. and S. B. Field, of Longmeadow, and George C. Dow, of Amherst, are the incorporators.

The new plant of the Douglas (Ariz.) Brick & Tile Company is now ready for operation. A railway switch has been built to the plant which will greatly facilitate the shipping. D. Darling is at the head of the plant.

After five months of hard work and waiting on material the Standard Clay Products Co., of Oskaloosa, Iowa, have finished their plant and have same in first class condition for the season's output. The demand was never more urgent.

Fire of an unknown origin caused damage estimated at $1,200 at the plant of the Syracuse (N. Y.) Pottery Co. recently. When the fire was found by the nightwatchman the entire second floor was ablaze, the flames leaping through a skylight over the drying room. The loss in stock which was in the drying room was considerable.

The Holston Brick Company is the name of a new concern recently organized at Oliver Springs, Tenn., of which Milton McDermott is president and treasurer. The company has taken over the old brickmaking plant at that place and will overhaul same, installing new machinery to bring the capacity of the plant up to 75,000 brick.

Unable to contract for brick with any assurance of delivery, J. W. Butler, of McKeesport, Pa., has bought the Peckman brick yard, in Greenock, and kept the force of men at work so that he could have the building material hauled by truck to Seventh avenue and Walnut street, McKeesport, where he is having a $50,000 garage erected on property for which he paid $30,000.

Three plant units, each with 50,000 daily capacity, will be built by the Kentucky Refractories Corporation of Russell, Ky., recently organized with $750,000 capital and Clyde K. Turley as manager. The company has 2,500 acres of flint clays, which will be consumed for manufacturing the 150,000 brick daily, and an experienced engineer has been engaged to undertake the plant construction. A general line of refractory products will be developed by this compay.

The Hiwassie Shale and Brick Co. has been organized at Pulaski, Va., and a modern brickmaking plant of 35,000 daily capacity will be erected. The officers for the first year are: John S. Draper, president; M. P. Landis, vice-president; T. A. Ireland, secretary-treasurer. They, with T. W. Kersey, E. C. Gannaway, Robert Bunts, Jr., and C. M. Truax, of Roanoke, constitute the board of directors. There is no brick or tile factory in that section and as Pulaski uses great quantities of brick, a good market for the product of the new plant is assured.

Henry A. Robinson, 61, founder of the National Sewer Pipe Co., at Barberton, O., and up until the present time associated with the Robinson Clay Products Co., died recently at his home in Akron, Ohio. His father, Thomas Robinson, and an uncle were the original owners of the Robinson Clay Products Co., one of the largest concerns of its kind in eastern Ohio. With the exception of two years which he spent in Mexico, Robinson lived in Akron. In 1890 he went to Mexico, and while there was instrumental in building a sewer pipe factory, returning to Akron two years later. Two sons and a daughter survive.

ADVERTISING—ACTION AND REACTION.

THE big guns of the advertising fraternity were in action in Indianapolis the early part of June, the occasion being the 16th annual convention of the Associated Advertising Clubs of the World. Among the interesting thoughts and ideas expressed and discussed it is desired to set forth here for consideration the good which result from the reaction of advertising upon those who are doing the advertising. Applying this thought to the clayworking industry who is there that will question that exploitation of brick and hollow building tile has given the makers of these products a greater pride in their appearance and architectural possibilities? Advertising when properly done awakens both interest and pride among those engaged in the industry doing the advertising. If there were no other returns from advertising this alone would be in many instances worth all it costs. We have spoken somewhat of this heretofore but it is a matter of such importance that it is worth having attention centered upon it until we all realize more fully that there is good results from the reaction of proper advertising as well as sales to come from the direction action.

BUSY DAYS AT MARION, INDIANA.

The Marion Machine, Foundry & Supply Co., of Marion, Ind., has experienced such a great increase in their clay business and foundry work that they are building a large addition to their factory, to take care of the expansion necessary. The new building being erected at the rear of their present plant adjacent to the Big Four depot, will be 300 feet long by 110 feet wide, of brick and steel of fireproof and daylight construction. A foundry with a daily capacity of 75 tons will be located there, where castings for their clayworking machinery, etc., will be made. The sale of their clay feeders and general line of machinery has been unusually heavy. The new addition, together with the old plant, will give them exceptionally splendid facilities for handling even a greater production than present business indicates.

NEW BOOKS.

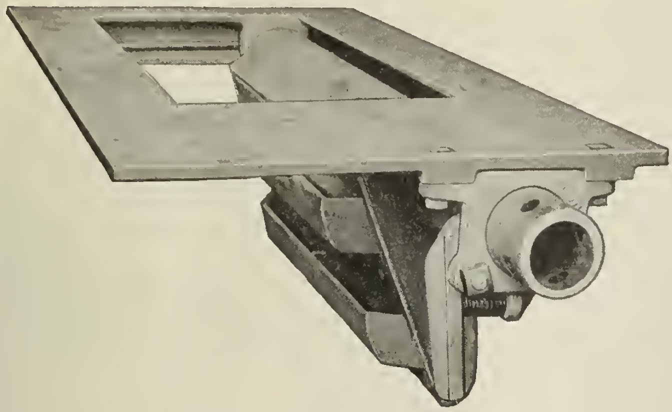
Bricklaying in Modern Practice—By Stewart Scrimshaw; Supervisor of Apprenticeship for the State of Wisconsin—Cloth, 182 Pages.

This book is another evidence of the tremendous strides being made in bringing the service of the educator-mechanic to the aid of the industrial efficiency of the nation. The author initiates the apprentice into an ancient art through the medium of practical studies, equips him with the fundamentals of an important occupation, and trains him in the modern methods of bricklaying.

The book is more than a text. It is rather a handbook, which the apprentice should study to get the history, the theory, the economics and the social significance of the craft, while he is learning the elements and is acquiring skill and experience "on the job." To be sure the materials of the trade, the tools and apparatus, the practical processes, the special phases of brick construction, safety and hygiene, are amply dealt with. The several chapters are provided with illustrations of designs, processes and materials. Each chapter is followed by a summary, a series of questions and a list of the more exhaustive literature on special phases of the art. As a whole it is concise, practical and modern textbook on the subject.

Temperature control not only helps insure a better burned product, but it also makes for economy in fuel, and that counts for something.

25% to 40%



The Furnace Gas Producer with Trunnion Dumped

Burning Paving Block with Furnace Gas Producers

SAVING

In

TIME—FUEL

and **LABOR**

USING

Your Present Kilns

By Means of

The

Furnace Gas Producer

Try It On One Kiln

International Clay Machinery Co.

DAYTON, OHIO

N. Y. Office—136 Liberty St.

Written for The Clay-Worker.

SEEN IN NEW JERSEY.

WITH BUILDING operations in the state taking all the brick that can be produced, and more, the price situation has not changed materially. Buyers find it difficult to get the brick they want and though the price seems high, they find they must pay it or go without. Never before have building operations, taking them as a whole, been as active as they are now, and if shipments were better they would increase. Capital shortage hampers some, but that probably would not be permitted to cause much reduction in the building done if materials could be obtained as ordered.

All brick districts are busy, some of them operating to capacity, but others hampered somewhat by lack of sufficient labor. Buying keeps the yards run down to a low point of storage, but aside from that the situation is promising and nearly all manufacturers are confident of a good year with sufficient sales to guarantee reasonable profits. Though prices of brick are high, compared with pre-war days, it must be remembered that the production costs are high, too, and that it is impossible to make larger profits than accrued during those times which seem almost historic, they are now so far away.

Prices haven't changed much during the past month. They are a shade higher, if anything, but that is due to the increased demand and the production which has not increased sufficiently to make any material difference in the quantity available.

In Newark the price is $32.00; Jersey City, $30.00; Paterson, $32.00; Trenton, $27.00; Camden, $25.00 to $27.00, according to quality; New Brunswick about $28.00; Passaic, $32.00; Hackensack gets $26.00 or more at the yards; Rutherford, $28.00; Englewood, $33.00. In the Oranges the prices are the same as in Newark, $32.00; Elizabeth gets $31.00 and $32.00; Morristown is charging $35.00; Hoboken, $35.00. Other towns and cities where extensive building operations are in progress are getting substantially the same prices. Local conditions may vary them a trifle, but the difference is slight and is rarely more than the slightly variable charges for delivery. Perhaps the most striking feature of the situation is the continued demand at these prices, which under circumstances prevailing a few years ago, would have been prohibitive. And with the present outlook the situation promises continued activity at these high levels, regardless of the fact that shipping and capital are unknown factors in all building operations.

Partition tile 3x12x12 are quoted at $203.50 per 1,000 square feet in and around Newark. The same price prevails in Jersey City; in Paterson it is about $205.00 per 1,000 square feet. Fire brick have advanced during the month and at Paterson they are now held at $85.00, while at Trenton, a production point, $75.00 is the price; Newark gets from $80.00 to $85.00 and other cities are asking in proportion. Fire clay quotations have advanced from $3.00 to $5.00 a ton, with demand good and increasing

The Independent Brick Company, of Trenton, is having a good run of business at the opening of the season. It has plants at Bordentown, Trenton, Fieldsboro and Kinkora. The largest plant is at Bordentown. The company produces 50,000,000 per year, and probably has no equal in that portion of the state. It makes not only common brick, but face brick as well. Its products are used in some of the largest buildings now under construction in its immediate vicinity as well as elsewhere.

Adrian Lyon, receiver of the Raritan Clay Products Company, has sold the plant located at Perth Amboy to the Moss Estate, Inc., of New York, for a price approximating $85,000; the title passed on June 15. This sale, together with an agreement which has been made with the mortgage creditor of the company, will permit payment of all claims against the corporation. The property comprises approximately 17 acres of land, with buildings. The company holds about 150 acres of clay lands in the Perth Amboy district and at the termination of the receivership these will be turned back to the corporation. The purchaser is to lease the property, according to present plans, to a concern that will manufacture specialties.

The Trent Tile Company, Inc., has arranged for the erection of a one-story addition to its plant on Clagg avenue. The company has acquired 150 feet additional frontage for expansion purposes. It makes ceramic wall and floor tile.

The Fords Porcelain Works, of Perth Amboy, has started operations in its new plant on Lehigh avenue, Perth Amboy, which is known as plant No. 3. It comprises the factory of the Standard Terra Cotta Company, and has been idle more or less for a number of years, the owners having concentrated their efforts at other plants. The plant was purchased by Abel Hansen, the head of the Fords Porcelain Works, to furnish increased capacity to care for his growing business. It will operate in conjunction with plant No. 1, which is at Fords, and plant No. 2, the main factory, at Perth Amboy, and will make the same specialties that are made at the other plants. It gives the concern a total of 24 kilns. The new plant will employ about 125 men. Approximately 200 are employed at plant No. 1 and 120 at plant No. 2. This company is the largest manufacturer of porcelain wash trays, with an output approximating that of all other similar establishments combined. The works are the result of the efforts of Mr. Hansen, who came to this country in 1888 and began work in the plant he has now bought at about $1.20 for an eight-hour day. Since then he has learned the business and has developed the concern into the largest of its kind in the state, with a reputation for sanitary ware which is surpassed by none in the state, or elsewhere. Moreover, along with the strenuous efforts required to build up this business he has found time to be active in furthering the ceramic interests of New Jersey and at the winter meeting of the New Jersey Clayworkers' Association was elected president, having served as vice-president the year before. He was active in securing the new ceramic building appropriation from the legislature and has done much else to make the clay industry of the state what it is today. His career is much like a romance, but is based upon common sense and an honest endeavor to give service in return for commensurate with the rewards. His products are all of the best and his output must grow to keep pace with his orders. He has now at least half a million dollars' worth of business on hand.

In the Hackensack district the situation has not changed greatly in a month. Practically all the plants are in operation, but not all are in position to operate to capacity because of the labor shortage. Those plants which are operating, however, are getting a fair run of orders and seem to be in position to satisfy most of the requirements of purchasers. The Hackensack district has taken on a new lease of life since the introduction of the motor truck into the delivery system. During the war the plants were prevented from doing business because they could not get cars and for the past three years not a car has been loaded. Trucks are carrying all the brick away at present. Buying is largely in the immediate vicinity or near enough to permit truck delivery. One of the schooners which formerly carried brick to New York, and elsewhere along the coast, has been tied up in the river recently. They were all used for other purposes during the war, and some were sold. This is the first one to appear in the river for years. Formerly they were numerous and each plant shipped its product to New York by these schooners. Some are 50 years old or more, but are doing good business yet.

In the Raritan district business has opened well. Most of the plants are in operation and are turning out as many brick as the labor supply permits. Production costs are very high, but with the demand for brick at present levels sales are certain, regardless of the price manufacturers are obliged to ask. So far as can be seen a good business is likely for the entire season. Manufacturers have orders ahead for considerable quantities now and more are coming in each day.

Nathan H. Sloan, broker, of Paterson, is enjoying one of the best seasons he has ever known. His sales have been very large and cover a wide territory in northern New Jersey. His principal worry is deliveries, the shipping question bothers him the same as it bothers everybody else who has commodities which cannot be shipped by truck. His cars are lost and are found in the most unexpected places. Cars shipped one week, for a 24-hour run, are frequently two or three weeks on the road, and so it goes. He says a broker's life is not a happy one when it comes to deliveries, but in sales conditions are satisfactory. —A. L. B.

The Modern Way
1. Only one central coal location
2. Clean kiln yard
3. No cleaning of furnaces or re-lining them, or bag walls ever required
4. Minimum labor attention and responsibility
5. Much shorter kiln burning periods
6. Heavy saving of fuel
7. Increased burning capacity without additonal kilns.
8. A better and more uniformly burned product
9. Avoids smoke nuisance absolutely,
10. And many other advantages
PRODUCER HOUSE
The Old Way
1. Excessive and wasteful burning conditions
2. Requires wasteful manual labor
3 Longer kiln burning periods
4 Uncertain burning results
5. Expensive product wasted through improper burning
6. Heavy kiln repairs needed
7. Unsightly conditions, etc.

THE DAY OF FIRING KILNS BY HAND IS PAST

The Underwood Producer Gas System of Burning Clay Ware in Up-Draft and Down-Draft Kilns has proven that it is scientifically, theoretically, fundamentally correct.

This proof is indisputably established by the records made in many installations now in operation.

The problem of burning your ware is the greatest of all stages of manufacture. No committee can investigate all burning systems in use and report on all of them to each existing plant and advise what is best for each. But we will fully investigate your burning conditions if you will investigate the Producer Gas Burning System for periodic kilns. We will then compare our investigations and co-operate to solve your burning problem on the highest economical baseis.

If you want to reduce your burning costs, let us begin co-operating now.

Write for the interesting "Story of Clay."

The Manufacturers Equipment Co.

Dayton, Ohio, U.S.A.

Mention The Clay-Worker.

Written for The Clay-Worker.

PACIFIC COAST NEWS.

THE HIGH BUILDING costs are doing little to deter industrial construction in San Francisco. During the month of May permits aggregating $3,879,000 have been issued, and several hundred thousand dollars have been added to this total since the first of June. The two biggest contracts last month were for an office building at Pine and Montgomery streets. (This is to be 15 stories high and will be constructed especially for two large insurance companies.) The second of the large contracts is for a theatre at Jones and Markets streets. These two buildings will aggregate about $2,500,000 of the total permits of last month.

During the present week a contract was let for a three-story class A bank and office structure to be built by the First National Bank building adjoining its present structure. The work will cost about $350,000.

While the costs of building are having little effect in delaying new construction at present, labor seems as scarce as ever, and transportation is having a serious effect. The brick people in particular are affected by the lack of cars, and they have been notified by the railroad companies that this lack is likely to become more acute rather than improve during the summer months. Some of the brick yards are so located that they can ship their product by water. This helps out the building situation in San Francisco and in other cities with water transportation, but does not help shipments to inland cities and naturally affects the output of the yards.

Most of the brick works of this state use oil for fuel and a good deal of uneasiness is felt over the shortage of oil which is announced by the Standard Oil Company and concurred in by some of the other oil companies. The Standard has sent circulars intimating that the brick companies may not receive their full requirement of fuel oil if the situation does not improve. There are some who question the actuality of the shortage or say that if not so much oil was shipped to foreign countries there would be ample oil for all purposes in this country. To substantiate this argument they point to the records of exports of oil from this port during the past three months. These show shipments of over 500,000 barrels in both March and April and of nearly 800,000 barrels in May. Fuel oil and gasoline are said to sell in the Orient, South America and Austria at a much higher price than they do in this country, and perhaps this is the reason for these heavy shipments, accompanied by announcements to the brick manufacturers that there is apt to be a shortage.

Ralph P. Stoddard, secretary and manager of the Common Brick Manufacturers' Association of America, is completing a tour of investigation among the Pacific Coast cities to encourage the wider use of common brick as a material to offset the present high cost of building. While in Los Angeles, Mr. Stoddard met the heads of local brick associations and received from them reports showing a greatly increased use of common brick in house construction.

Three Long Beach men have filed articles of incorporation for a brick building company under the name of the Southwestern Brick Co., of Long Beach. The men interested are: J. C. Suits, W. M. Branstetter and W. L. Mulford. They expect to establish their plant before the summer is over.

The Western Pottery Co., of Los Angeles, has decided to increase its plant and will build a large factory in Glendale for the manufacture of tile products.

A number of members of the San Francisco Builders' Exchange were recently the guests of Chris Berg, president of the Port Costa Brick Co., in a visit to the plant of the brick company. While the object of the trip was to show the company's plant and the quality of brick that is being turned out, the excursion was made one of jollification and entertainment and will long be remembered by those fortunate enough to go.

Fire broke out last week in the plant of the Western States Porcelain Works near San Pablo and the entire plant was destroyed, entailing a loss of about $100,000. A large number of engines from neighboring towns responded to the call, but a heavy wind aided by inadequate water facilities rendered their efforts ineffectual.

Architects have completed plans for a two-story and basement brick club and lodge building to be erected in Porterville, Cal., for the Elks. The cost of the building is estimated at $100,000.

J. T. Roberts, president of the Stockton Fire and Enamel Brick Co., of Stockton, is motoring in Yosemite Valley with his family.

Building permits in Reno, Nevada, show an enormous percentage of increase over the first four months of a year ago. The total is close to $300,000, which is 800 per cent. greater than last year.

The conflict between the city council of Los Angeles and the brick yards located in the Boyle Heights district has been settled by the council giving the brick yard a year's time in which to move their plants. When the yards located there the district had no private homes in the neighborhood, but it is now becoming a fashionable residence district and the factories have been ordered to move.

San Francisco, Cal. —SUNSET.

Written for The Clay-Worker.

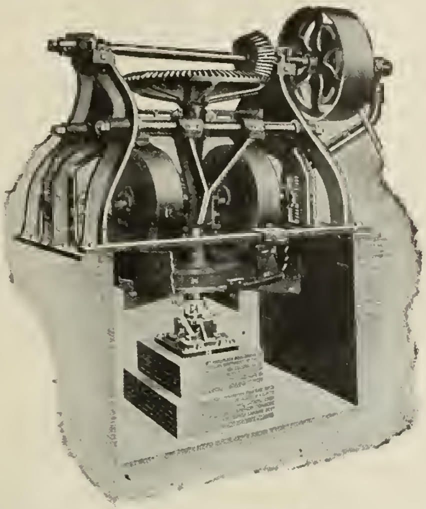
NEW YORK AND VICINITY.

THE PRICE of common brick in New York is $30.50 per thousand, as it has been for some weeks. The available supply is in excess of 10,000,000, which is a fair quantity for even New York. Shipments are coming down the river with fair regularity and the situation shows no indication of shifting materially. While building conditions in New York are better than they have been, they are not what they might be. The housing situation is pressing, but no immediate solution seems possible, while other buildings are lagging for one reason or another. It is better than it was last month, but because of excessive taxation and the tightening up of all loans the market for building loans has been partially shut off. Few are able to obtain as much money as they want and therefore are curtailing operations for which they have filed plans. Moreover, the labor situation has been a bother for months, and while at present peace seems to prevail in most of the building trades the situation is not quite what builders want to see. Wages are so high that operations on some structures are practically impossible. However, the improvement as compared with previous years, is so marked that the trade feels better. Farther than this, the material market is in a fair condition and movement is reasonably active, when the price of such commodities is considered.

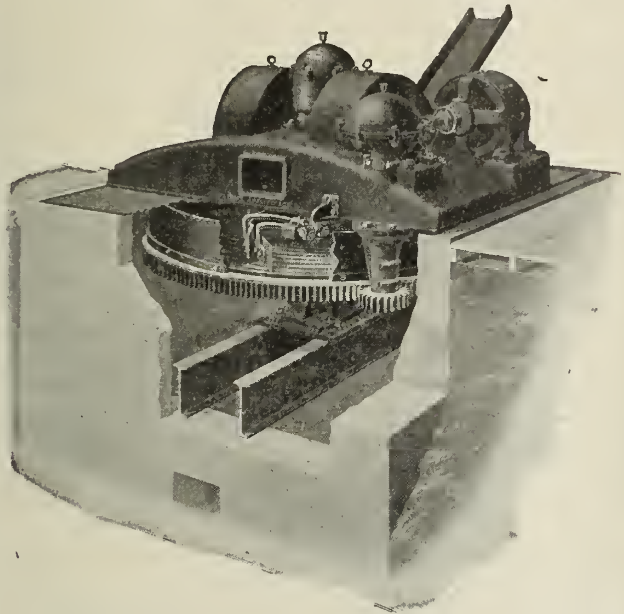
Up the Hudson River brick plants are in operation, but they are hampered to some extent by the lack of sufficient labor. The shortage is not quite so pronounced as it was last year, but it is bad enough and will have considerable effect upon production. Thus far the conditions seem to point to about the same output as last year, which was approximately 500,000,000. This is not much more than half the output in the years preceding the war. As many as 1,000,000,000 have been produced in the Hudson River district when labor was plentiful and other factors were favorable. But with the situation as bad as it is now, manufacturers consider themselves fortunate to maintain even the present output.

Partition tile, 3x12x12 is priced at $215 per 1,000 square feet in New York, and is hard to get at that price.

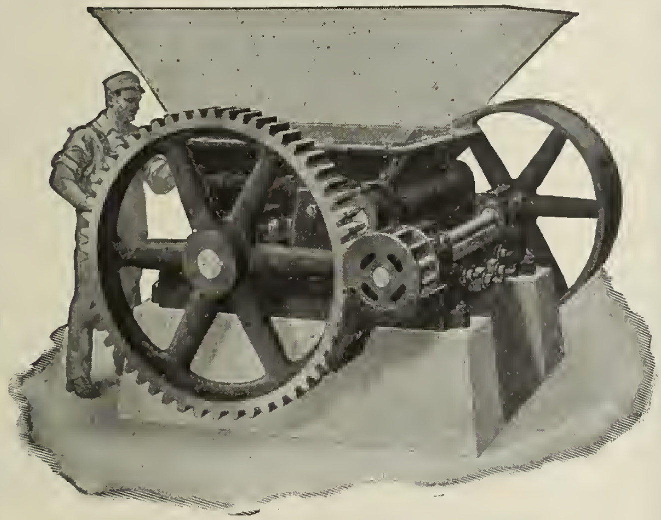
Firebrick are quoted at $75 per 1,000 in New York for a fair grade of material. Better would probably cost $5 to $10 more. Demand exceeds the supply. Fire clay quotations are figured about $5 above last month's prices. —BURTON.



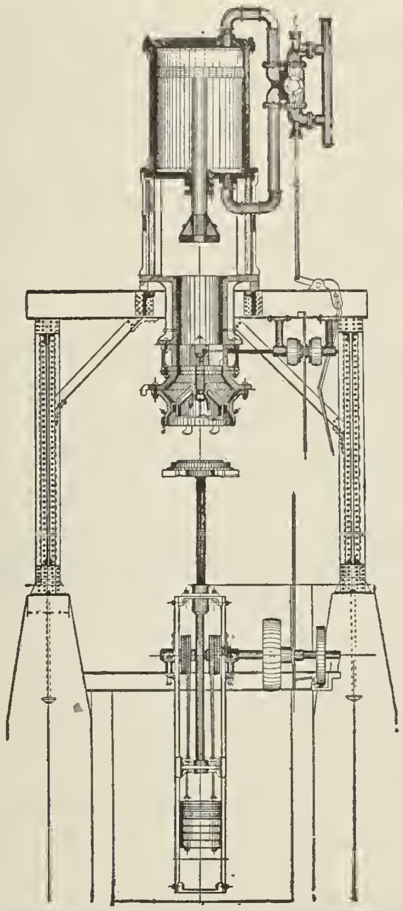
Standard Grinding Pans Made all Sizes



Model A-300 Step Bearing Type Dry and Semi Dry Grinding Pan



Single Roll Crusher



Sewer Pipe Press

Machines for
Crushing,
Grinding,
Pulverizing,
Empounding,
Tempering,
Mixing and for

Elevating and Conveying all kinds of Materials.

Steam Presses for Making Sewer Pipe, Drain Tile, Hollow Block, etc., are Manufactured by

THE STEVENSON CO.,

Gen'l Office and Works **Wellsville, Ohio**

Engineering and Western Sales Office,
Monadnock Bldg., Chicago, Ill.

Financial Assistance Given

Clay Product Manufacturers who desire increased output or larger equipment. I have sold many Clay Product Company Bonds, and have a large clientele for this class of securities.

Correspondence Invited

FRANKLIN W. MORGAN
First National Bank Bldg. Chicago, Ill.

The Sensation of the Kiln World!

Henry Webster & Sons' Continuous Kilns

The Continnous Down-Draft, a perfect down-draft kiln.
The Continuous Muffle, a perfect muffle kiln.
The Continuous Combination Kiln and Steam Generator, combining every phase of burning, for any class of goods, no matter what.
Patents granted and pending in United States of America, Great Britain, Canada and other countries.
Working models, plans, etc., can be seen by appointment at our offices, 628 Lexington Ave., Newport, Ky.
P. S.—Will be pleased to meet any experts in the trade and prove our assertions.

Henry Webster & Sons
Kiln and Drier Experts Consulting Engineers
NEWPORT, KENTUCKY

INVESTIGATE

The Minter System

IT burns cleaner than direct fired periodical kilns because the water-smoking is done with clean heat, and the kilns require only about 50% of the fuel usually required in fire holes. The per cent of dust, ashes, etc., is reduced in proportion to the amount of fuel required.

Investigate it from every angle—first cost, labor cost, fuel cost, production cost per 1000 capacity, flexibility, and all the way you will find the Minter System on the job ready to deliver the goods. *Write us for all details.*

FLINT RIVER BRICK CO.
ALBANY, GA.

BIG DEMAND FOR BRICK IN WASHINGTON—OTHER NEWS FROM THE NATIONAL CAPITAL.

RENEWED activity in building in both the city and suburbs is causing a steady and increasing demand for brick in the national capital. Many large residential operations which have been held in abeyance for several months past on account of uncertainty in building material prices and labor are now getting under way again. One of the direct results of this is that several of the larger brick maufacturers are finding it necessary to refuse orders from points outside of the District of Columbia for delivery within ninety days. Prices are keeping well up, especially for common brick, although still somewhat below those obtaining in many sections of the country.

Fiske & Company, face brick dealers, who were located for a long time past at 1426 New York avenue, have removed to more commodious quarters at 734 Fifteenth st., N. W., a few doors from the United States Treasury building, in order to take care of their increasing business. The concern reports a good run of trade, with many orders on hand running into big figures.

The Department of Commerce, in statistics just available, reports a big increase in our exports of both building and fire brick in the year which ended on April 30, 1920. For the twelve months named we shipped abroad fire brick valued at $2,612,400, while for the corresponding period ended April 30, 1919, the total was $1,814,600. Building brick valued at $381,698 were sold abroad in the year ended April 30, 1920, as against $101,000 in the year ended April 30. 1919. Tiles valued at $702,000 were exported in the year ended April 30, 1920, and in the year ended April 30, 1919, the total was $496,842.

R. Bruce Lamond, well known in brick and tile manufacturing circles of Washington, has again taken up the manufacture of drain tile, sewer pipe and clay specialties. A fully equipped plant is in operation at Lamond, D. C., in the northern suburbs of the city. A good volume of business is said to be on hand, with fine prospects for summer and fall.

U. S. Consul Eells, reports from Nairobi, British East Africa, that the Nairobi Brick and Tile Works, which was recently organized, is ready for production on a fairly large scale. It is expected that the output will be 500,000 bricks monthly in addition to 100,000 tiles. The company owns a clay deposit of over 50 acres. The immediate output will be building brick, but brick of all kinds will be made in the near future. A good market for American brickmaking machinery is said to be developing there.

In the last hours of the recent Congress session a petition was presented in the House of Representatives from the Betson Plastic Fire Brick Co., Rome, New York, favoring the proposed tax on advertising and against increases of the income tax on advertising and against increases of the income and business taxes. The petition was submitted by Representative Snyder, New York, and was referred to the House committee on ways and means.

The Department of Commerce is informed that the present shortage in Dairen, China, of suitable buildings for commercial uses is accentuated by the insufficiency of bricks and the consequent high prices, which were, in March, about 50 per cent. higher than in the previous July. Of the 50,000,000 bricks produced annually in Dairen, some 30,000,000 are machine made and 20,000,000 hand made. In an attempt to meet a portion of the local demand, which is about 20,000,000 bricks a year, one contractor has recently purchased American brickmaking machinery to the value of $23,000.

—ALTHOMAR.

It is squarely up to the English-speaking peoples of the world to maintain the mastery of both the water and the air.

COME TO LANCASTER, PENNSYLVANIA.

SEE—the modern 50,000 daily capacity brick plant, soft mud sand molded process, that we are building for the LANCASTER BRICK COMPANY, INC.

MINING THE CLAY.

SEE—the Thew Automatic Electric Shovel in operation.

CLAY DELIVERY.

SEE—our two and one-half yard automatic end dump CLAY CARS, delivering the clay to our GRANULATOR.

CLAY PREPARING EQUIPMENT.

SEE—our heavy type GRANULATING CLAY FEEDER granulating the large lumps of clay, thoroughly mixing the clay in dry state as it comes from the clay bank and automatically feeding the crusher.

SEE—our big 24-inch COMPOUND DISINTEGRATOR and CRUSHER thoroughly disintegrate the clay and stone. This Crusher is the famous "Parry" design manufactured by us.

SEE—our steel frame CLAY DELIVERY CONVEYOR feeding the PUG MILL.

SEE—our heavy, all iron and steel PUG MILL directly connected to the BRICK MACHINE.

BRICK MAKING EQUIPMENT.

SEE—our 1920 model soft mud BRICK MACHINE with automatic self strike and automatic bumpers. A great big heavy powerful machine that will turn out the brick as fast as you want them, and stand up to the work.

DRYING EQUIPMENT.

SEE—the pallets of brick leaving the automatic dumping tables, and being automatically delivered to the two men in the Dryer who place the pallets of brick on the pipe rack shelves of our PIPE RACK DRYER, where they are dried tonight and set in the kiln tomorrow.

SEE—the splendid arrangement of our PIPE RACK DRYER building providing ideal working conditions for the men, and mechanically correct construction for the principles of drying.

SEE—the CAR SYSTEM taking the brick from the dryers to the kilns using labor that cannot physically handle a wheelbarrow.

SEE—the miscellaneous equipment furnished by us that completes the plant such as MOLD SANDERS, SAND GRINDER and SIFTER, TRANSFER CARS, KILN IRONS, ETC.

We have also designed and are now building a complete soft mud plant on the Hudson River, the Hackensack district, in Virginia and two large outfits in London, England.

We specialize exclusively on furnishing complete equipments for soft mud brick plants.

Our machinery is a development of the famous "Martin" machinery originated in 1858, and used successfully by brickmakers in every section of the country.

We carry a large stock of repair parts for the "Martin" machinery on hand at all times.

LANCASTER IRON WORKS, Inc.,

Lancaster, Pennsylvania.

Jas. P. Martin, Manager Clayworking Machinery Department.

New York Office,
501 Fifth Avenue.

Join the National Brick Manufacturers' Ass'n. Join the Common Brick Manufacturers' Ass'n.

Trautwein
DRYERS

ARE THE LAST WORD
IN SCIENTIFIC
CLAY PRODUCTS DRYING.

WASTE HEAT
STEAM (DIRECT OR INDIRECT)
RADIATION.

TRAUTWEIN DRYER AND
ENGINEERING COMPANY
Clay Works Engineers
608 So. Dearborn St.
Chicago, Ill.

GRUENDLER
CRUSHERS

are increasing production and reducing costs for hundreds of big operators.

Large or small pieces of clay, shale and other materials, dry or moist, are reduced to any degree of fineness, in one operation.

Their rugged strength, freedom from repairs, greater capacity per horsepower and economical operation, make Gruendler Crushers the most profitable machines you can buy.

Literature and full particulars will be sent upon request.

Gruendler Patent Crusher
& Pulverizer Co.
902 No. Main St. St. Louis, U.S.A.

Written for THE CLAY-WORKER.

EASTERN OHIO CLAY NEWS.

THE WHITACRE-GREER Fireproofing Co. operating two of the largest fireproofing manufacturing plants in the United States, one at Magnolia and the other at Waynesburg, are both idle as the result of rail congestion and inability to secure cars for shipment of orders. Officials of the company say the plants may be idle indefinitely. Order files are bulging but it is impossible, officials claim, to operate under existing conditions. This company has been furnishing much of the fireproofing material being used in the construction of buildings in the Canton-Akron district. The Whitacre-Greer Co. announced that Arthur Brewer is now in charge of the estimating department, a service long established and which few companies offer their trade.

Organization of the Hopewell China Co. at Hopewell, Va., has been completed and the following officers elected: President, Sol Ostrow; vice-president and treasurer, William R. Scragg; secretary and general manager, Louis Groglode. All from East Liverpool, Ohio. The two buildings for use as a factory have been secured and all material for the building of the main plant is on the ground and with the arrival of machinery from this city operations will be started, which probably will be soon after July 4. Three bisque and one glost kiln have been completed and the three other glost kilns are nearing completion. President Ostraw stated recently that the new concern will carry from six months to a year's supply of clay. The Patterson Foundry and Machine Co. of this city has shipped much of the slip house machinery, together with the sagger making equipment.

The Gem Clay Forming Co., Sebring, Ohio, of which E. C. Albright is president, is planning extensive additions to its factories here. B. H. Greene, general manager has been in the east several days arranging for the manufacture of a new product, which will tend to greatly increase the factory's output. H. D. Weaver is secretary and treasurer of the company. The company specializes in the manufacture of mantle rings, porcelain and ceramic specialities.

The Owen China Company of Minerva has announced an increase in capitalization from $125,000 to $300,000. The company decided upon this step to take care of increased business and proposed extensions to the plant. Railway congestion and inability to obtain cars is interfering with shipments. Officials of the plant state they anticipate a loosening up of congestion in this district and that shipments will go forward with more regularity. Much crockery is being hauled via trucks to Canton where three railways are available. The distance overland is slightly less than 25 miles.

The affairs of the Universal Pipe and Tile Co., Tiffin, Ohio, which have been disorganized for some time because of the friction among stockholders was brought to a crisis recently by a suit filed for appointment of a receiver and dissolution of the corporation. The suit was brought by C. H. Mathias. C. W. Hunderlock and Fred Baumgardner, directors.

At a meeting this week at Cambridge, O., of the stockholders of the Florentine Pottery Co., the capital stock of the corporation was increased from $150,000 to $250,000. Of the increase $27,000 has been taken up by the present stockholders. The new capital is to be used for the expansion of business. The following directors were elected: J. H. Kirtland, F. G. Stroehman, E. S. Remone and L. Streiback, all of Wheeling, W. Va.; C. C. Cosgrove, George McLaughlin, and F. C. Arbentz of this city. The board organized by electing Mr. Kirtland president.

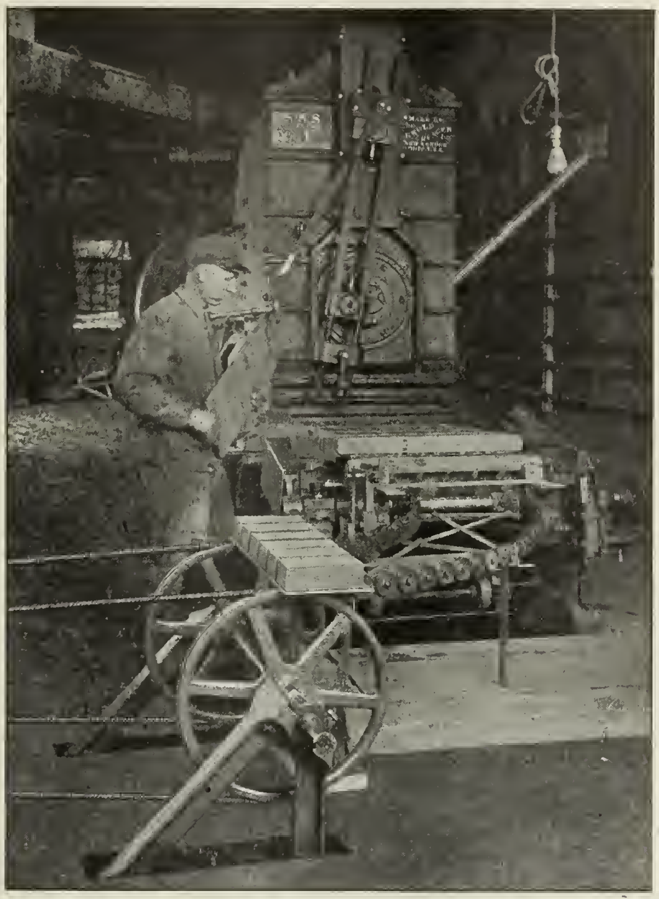
Victor M. Weaver, representing the American Electric Manufacturing Co., of Harrisburg, Pa., has completed negotiations to take over the holdings of the Calumet Sewer Pipe Company at Toronto, Ohio. The site purchased consists of 42 acres, and although no details have been made public, the new plant, which will manufacture electric specialties, will build a modern factory. The machinery for the plant already has been ordered and engineers have staked out the location of the main factory and boiler room. REX.

LABOR

How many unnecessary men are you using at the head of your soft mud machine? Write us and we will tell you how the same work can be done much better by one man.

The S. S. S. Special Automatic Soft Mud Brick Machine

- Brick Moulds
- Brick Barrows
- Trucks
- Brick Wagons
- Clay Cars
- Strike Knives
- Dump Tables



- Disintegrators
- Crushers
- Pug Mills
- Clay Conveyors
- Sanders
- Winding Drums
- Cable Conveyor Systems

Everything for the Brick Plant

We manufacture six different sizes of Soft Mud Machines and can equip any size yard from the smallest to the largest.

The Arnold-Creager Co., New London, Ohio

They make
Good Belts
give Better
SERVICE

They insure
continuous
production

They cut out
waste of
time, labor
& Belting

They afford
full power
Transmission

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CRESCENT
BELT
FASTENERS
Write Dept. 12
CRESCENT BELT FASTENER COMPANY
383 Fourth Avenue, New York, U. S. A.

TRADE NOTES.

We have received an announcement from the Parry Brick Company and the Boston Brick Company of the removal of their office to the Merchants Building, 77 Summer St., Boston, Mass.

Wm. Conway, of Philadelphia, together with his wife and two daughters, is making an extended trip west. Mr. Conway writes that he is making this as a pleasure trip stopping at interesting points as fancy dictates, but will go to the coast before turning eastward again.

H. F. Bird, of Casper, Wyo., advises us he is in the market for a second-hand Boyd press and a stiff mud brick and tile outfit, second-hand preferred, and located west of the Mississippi in order to insure quick delivery. The machinery must, of course, be in first class condition.

The Shale Brick Company, of Columbus, Ohio, took over the plant and property of the Hallwood Brick & Tile Co. of that city some months ago, and has made a number of improvements in the plant bringing it up-to-date in every particular. A suit has been filed asking for an order to dissolve the old Hallwood Company and divide the assets among the heirs of Henry S. Hallwood.

A. ITTNER BRICK CO. CHANGED TO CORPORATION.

The General Clay Products Corporation, of St. Louis, Mo., has completed its organization by the election of Anthony Ittner as president; W. W. Ittner, vice-president and general manager, and J. B. Hulett, secretary and treasurer. The company has acquired the property formerly owned by the A. Ittner Brick Co., comprising two plants at Belleville, Ill., with connections to all railroads running into East St. Louis. These plants are well laid out for the efficient manufacture of brick, have all down draft kiln and after the repairs and improvements which are now under way have been completed will have an annual capacity of 20,000,000 brick. Both plants are now in full operation and will make the same high quality of ware which always characterized the A. Ittner Brick Company, with the same splendid service and fair dealing.

THE BOOK OF SMILES.

The current issue of the Book of Smiles asks its readers to be serious for a moment and to advise the publishers, The Standard Dry Kiln Co., Indianapolis, Ind., of their full and exact street and number address, and so insure its prompt delivery. Be it known that postal officials are no longer required to deliver second class matter unless the street number address is given. Aside from this pardonable bit of seriousness and the business announcements relative to the merits of the Standard Dry Kiln, the Book of Smiles contains the usual grist of jokes and conundrums. The best of the latter is this: "The question is not how the apples get into the dumpling, but how the peaches get into the tight skirts." Among a number of verselets, the following is worthy of serious consideration:

SAFETY FIRST.

If a chicken smiles at you,
Safety First!
Please be careful what you do,
Safety First!
You may not mean any wrong;
She's but one girl in a throng,
But your wife may come along;
Safety First!

CL

JULY, 1920

THE CLAY-WORKER

NOTABLE BRICK HOMES—Fine Old Brick House in Butler County, Ohio, Where Governor Cox Was Born.—See Page 28.

Published Monthly by
T. A. RANDALL & CO.
INDIANAPOLIS, IND.
OFFICIAL ORGAN OF THE N. B. M. A.

Published monthly. Subscription price, $2.00 per year. Entered as second class matter, January, 1884, at the post office at Indianapolis, under the act of March 3, 1879. Title registered and contents Copyrighted by T. A. Randall & Co., 1919.

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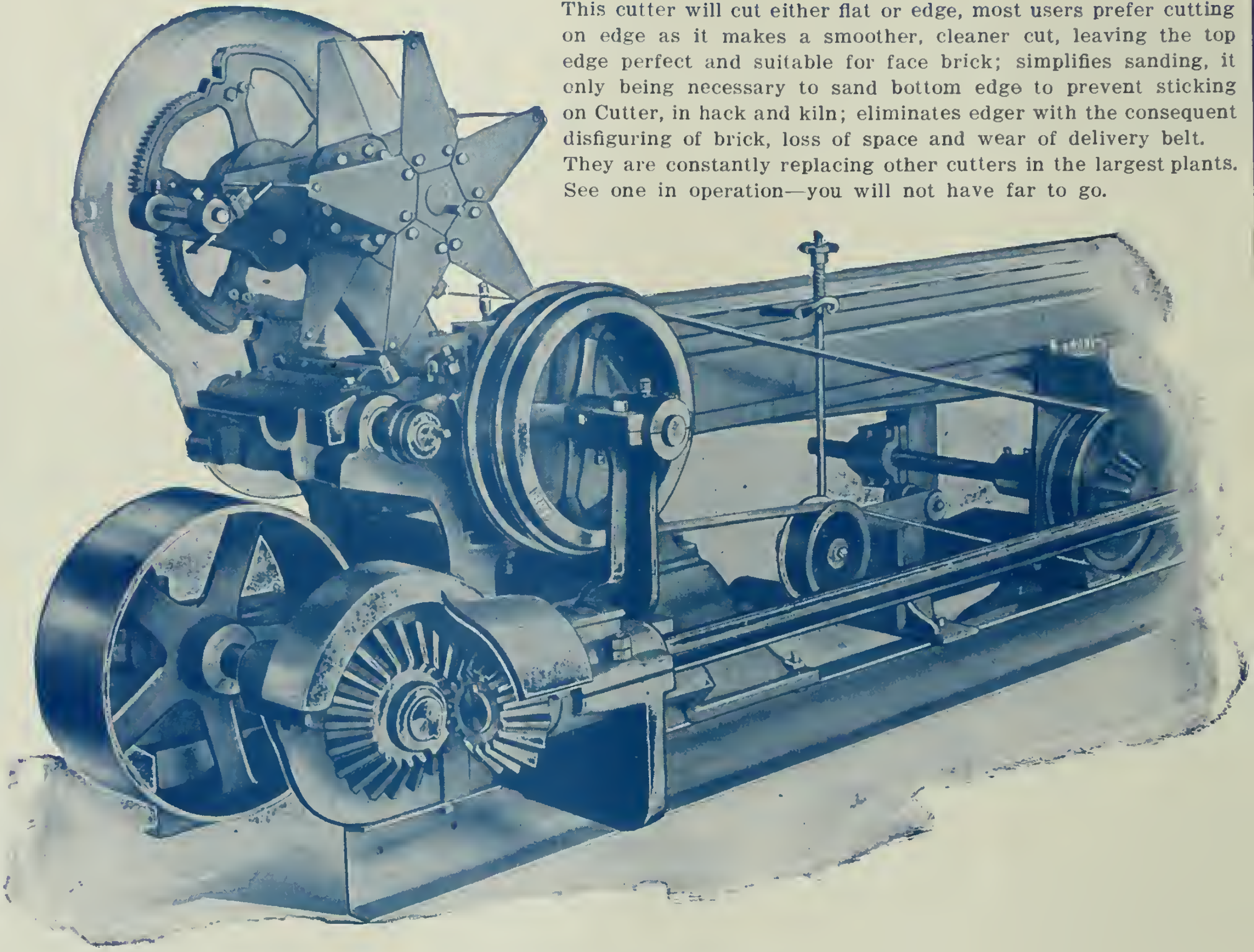
It Pays Well to Be On the Square,
Especially to Cut Your Brick Squarely

This is Exactly What the Steele Cutter Does and Continues to Do

This cutter will cut either flat or edge, most users prefer cutting on edge as it makes a smoother, cleaner cut, leaving the top edge perfect and suitable for face brick; simplifies sanding, it only being necessary to sand bottom edge to prevent sticking on Cutter, in hack and kiln; eliminates edger with the consequent disfiguring of brick, loss of space and wear of delivery belt. They are constantly replacing other cutters in the largest plants. See one in operation—you will not have far to go.



WHAT THEY SAY

Just a Few of Hundreds of the Same Kind We Have Received

W. E. DUNWODY, V. P., CHEROKEE BRICK CO., Macon, Ga.: "I think yours is the best cutter in existence. That is putting it about as strongly as I know how, and if you know any stronger way to put it, write me, and I will affix my signature."

BIBB BRICK CO., Macon, Ga.: "The two Rotary Automatic End Cutters installed for us about a year ago have given perfect satisfaction, and have not even required adjustment since putting them in. Our bricks are in much better shape than when we used the other cutters, cutting flatwise, the ends are always square, and bricks are not bruised as when we used edger. There is quite a saving in wires, as they do not break so frequently, cutting the narrow way."

SHREVEPORT BRICK & TILE CO., Shreveport, La.: "Your brickmaking outfit with feeder and car system, which we have operated three years has given perfect satisfaction. We really believe your cutter to be the best on the market."

Our Automatic Side Cutters Are Just as Good

J. C. STEELE & SONS Statesville, No. Carolina

CLAYWORKING MACHINERY

Western Representative: Geo. H. Smith, 3309 E. 37th St., Kansas City, Missouri
Northern Agents: The Manufacturers Equipment Co., Dayton, Ohio
Eastern Agents: Carter Engineering Co., 39 Cortlandt St., New York City

Engineering Library
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THE CLAY-WORKER

THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 74. INDIANAPOLIS, JULY, 1920. No. 1

Written for THE CLAY-WORKER.

ROTARIANS HAVE A GALA WEEK AT ATLANTIC CITY.

International Rotary Holds a Great Convention—American and Foreign Delegates Crowd the Great Hotels and Throng the Board Walk and Amusement Piers—A Glimpse of Somers Bros. Brick Plant.

ATLANTIC CITY is known the world over as a pleasure resort. It has been well named the "Nation's Playground," and during the week of June 20 it was all of that and then some, for the Rotarians from abroad joined the American delegations in annual conference. The deliberations and jollifications continued throughout the week. It was one of the largest conventions of the year, the total attendance being over 10,000. The capacity of the big hotels was taxed to the limit, but the vast throngs of visitors were comfortably quartered and happy for, thanks to the local Rotarians, there was a series of delightful entertainments that will make Atlantic City a pleasant memory to all participants.

The Country Club

A Quiet Resort.

The Club Entrance.

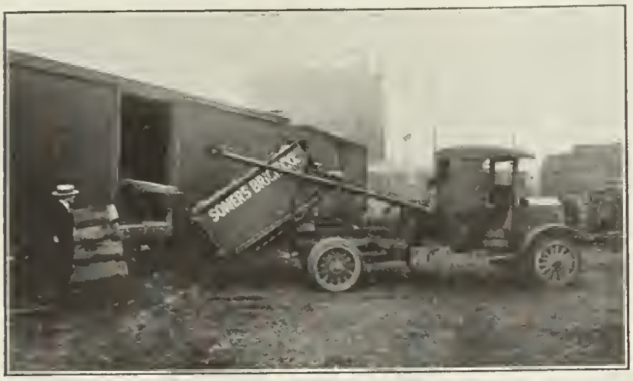
Atlantic City, N. J.

Hubert Somers at the Club Pump.

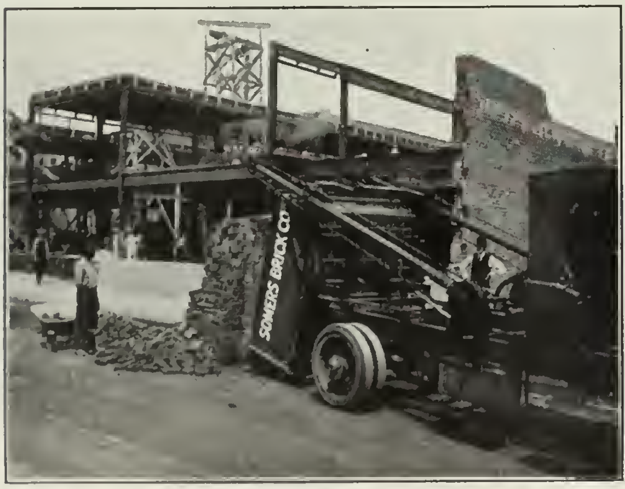
One of the leading spirits of the Atlantic City Rotary Club is none other than our good brickmaker friend Hubert Somers, well known to the members of the N. B. M. A., as he has been a regular attendant at the national conventions for many years. "Hubert," like all good Rotarians, is a booster. He did a good job of boosting Atlantic City by devoting his time and talents during the convention to the orderly care of visitors. He proved himself a true Rotarian by rendering exceptional service, being on the job day and night from Sunday until Saturday.

Be it known that Rotary stands for service. Its slogan, "He profits most who serves best," is an expression of the spirit of Rotary, and a scrutiny of Rotary Club membership will disclose the fact that its members include leaders, progressive spirits, in all of the chief industries. In nearly every Rotary Club there is a representative of the brick industry, and most of these representatives are members of the N. B. M. A. The objects and purposes of the two associations are much the same, they stand for progress and the betterment of business affairs. They are both social to a large degree, for it has been found that good fellowship is an essential to success in the best sense. For this reason members of the N. B. M. A. always feel at home in a Rotary meeting.

Just as the N. B. M. A. has sought to benefit every one connected with the clay industries, so Rotary endeavors to improve general business conditions by precept and example, and the cultivation of the true spirit of co-operation; team work, so to speak. Rotary is progressive. It seeks the best in commercial, industrial and professional life. Rotary has been defined by many clever thinkers. One of the best definitions is that by David W. Thomas, Rotarian of Baton Rouge, La. He says in part:


Loading from Freight Car. Note Mathews Gravity Carrier.

Truck Load on the Way.


Depositing the Brick at the Building.

An Unique Association.

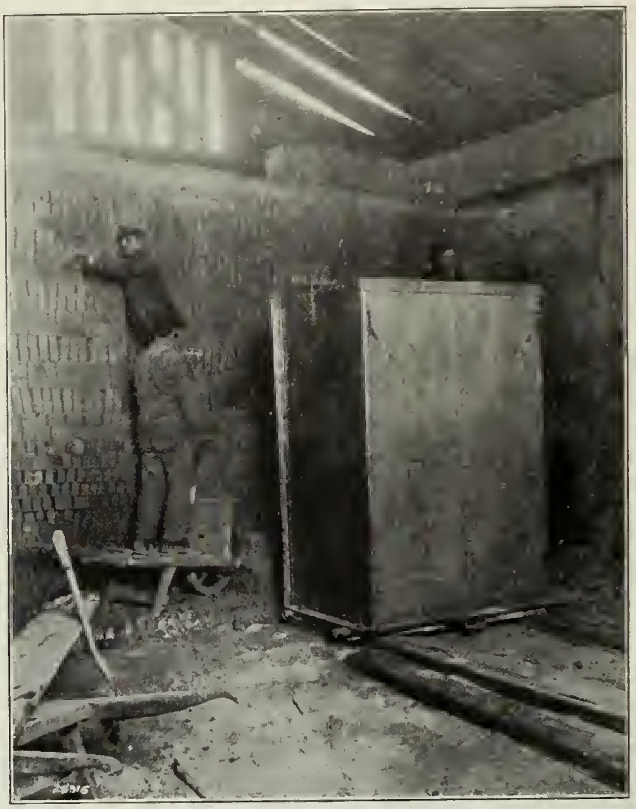
"The Rotary Association is unique among all organizations. Its object is to elevate personal character, to mold business ethics to a higher plane, to make its members clean, virile men, patriotic, kind, charitable, and to forget self in service to others. What can I get for myself?—is not Rotary. What can I do for others, what help, assistance, encouragement can I give to my neighbor?—that is Rotary.

"There is a fellowship in Rotary. We meet around the table and talk our thoughts, knowing they will be kindly received; we tell our triumphs, knowing they will be appreciated; we tell our troubles, knowing we will receive kind sympathy and unselfish advice; we tell our ambitions, knowing help will be extended to realize them; the joy of unselfish communion of man with man—that is Rotary."

Those who have taken an active part in N. B. M. A. affairs can in truth say, "That is N. B. M. A."

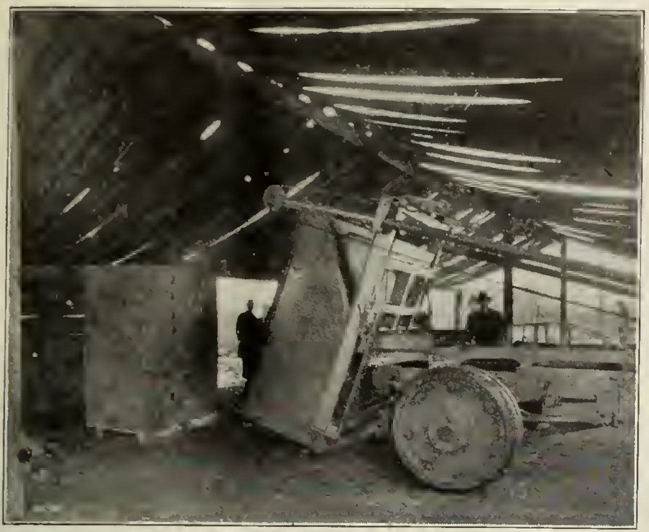
A Good Rotarian and a Good Brickmaker.

Hubert Somers is a good Rotarian, and by the same token he is a good brickmaker. He and his brothers established a brick plant some six or eight miles from the city many years ago. From time to time improved machinery and appliances have been installed, keeping step with the progress of the industry. Recently, desiring to improve the service, he adopted the truck method of delivering brick, and we are pleased to illustrate the manner in which he is handling brick from plant to building operation. He is using the Fontaine demountable truck bodies supplied by the American Truck Body Co., of Martinsville, Va., and is much pleased with it, as it enables him to deliver the brick in better shape and with less trouble and waste than by the old dumping process.

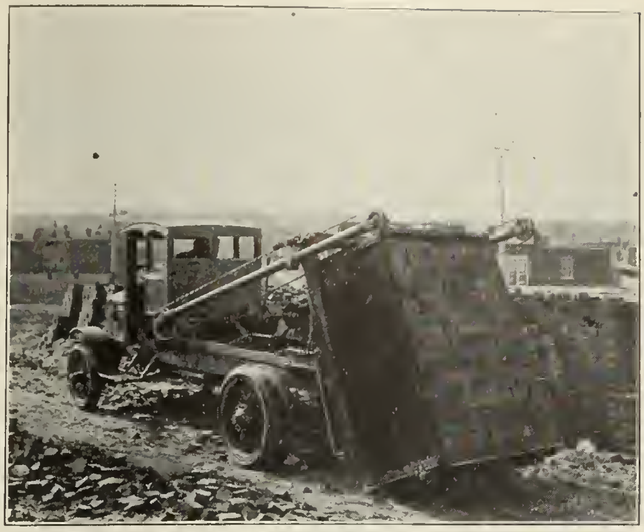

Loading a Truck Body in the Kiln.

Delivering Brick by Truck.

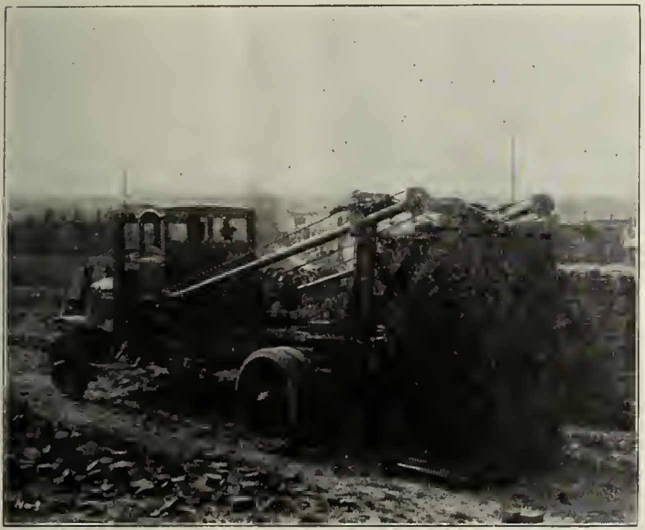
"You will remember," he said, "that at the Pittsburgh Convention of the N. B. M. A. in 1919 this company exhibited circulars of their truck handling body, which at that time was



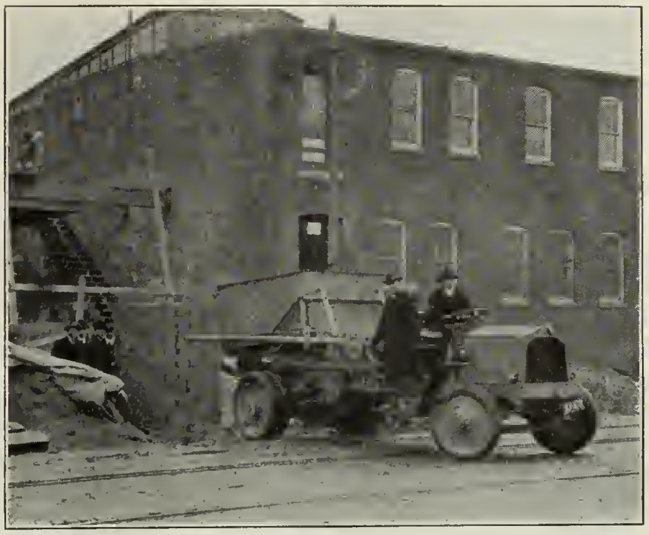
Picking Up Loaded Truck Body in Kiln.



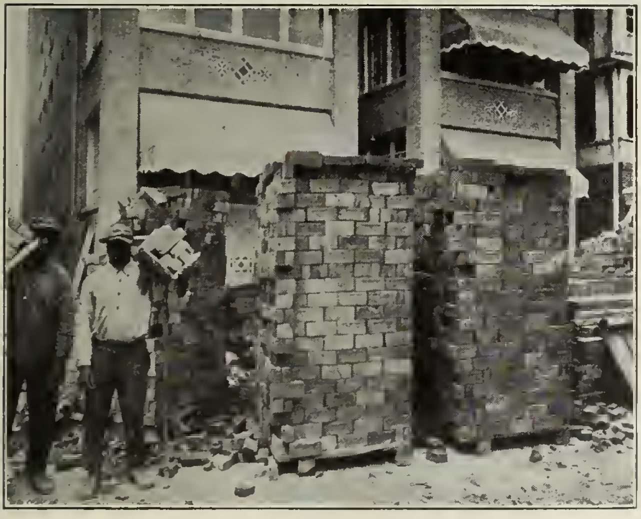
Brick Are Handled with Ease—No Breakage.



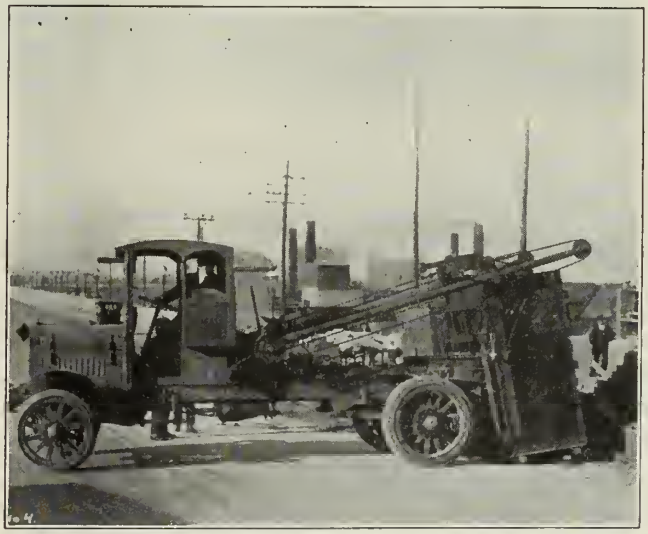
Depositing Loaded Truck Body.



Truck Leaves One Load and Goes for Another.



The Hodcarrier's Job Made Easy.

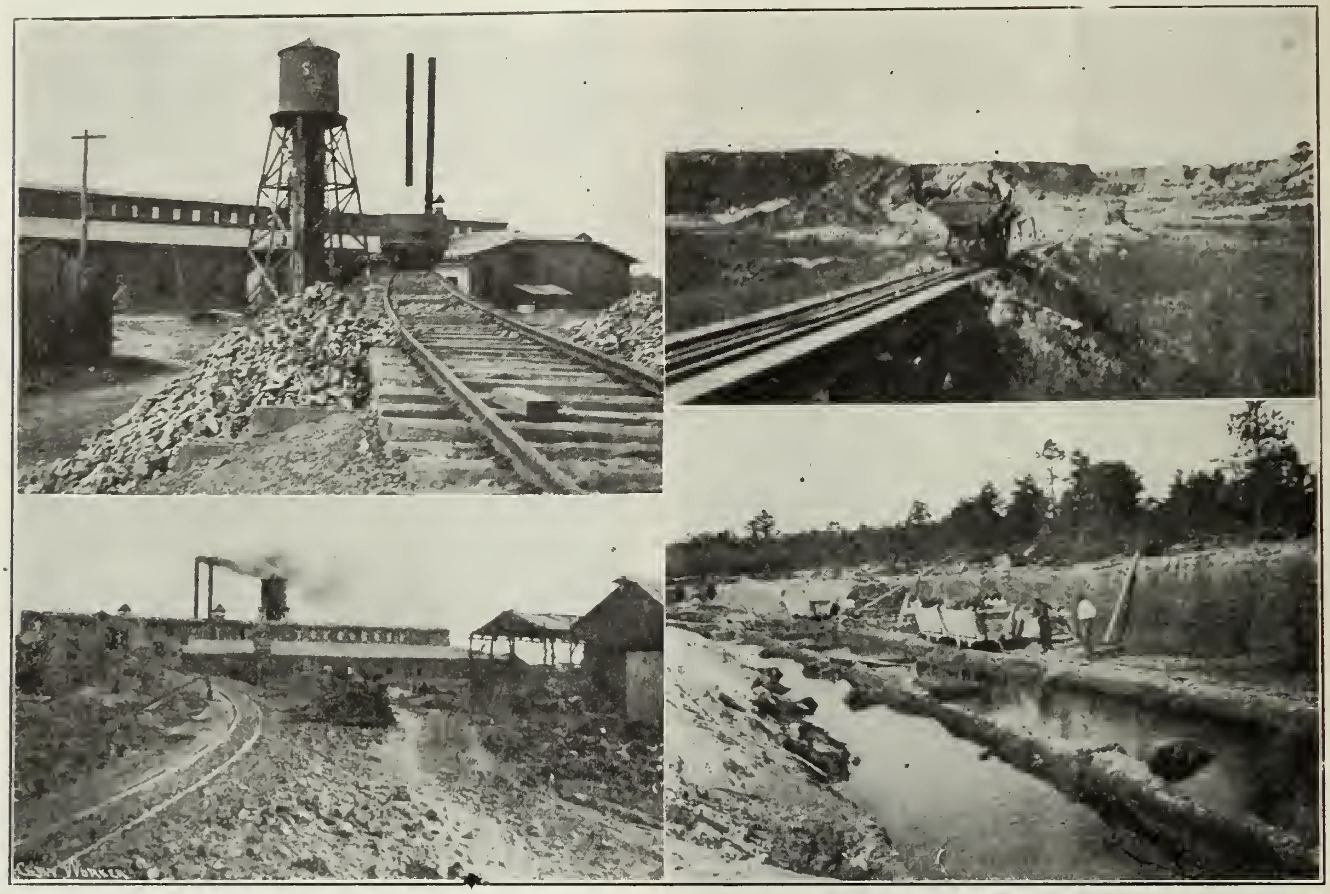


One Man Can Operate Truck.

very crude and which could only handle one thousand brick by use of hand power hoist. I have been watching the development of this outfit, and decided recently that it was perfected sufficiently to attempt the use of it.

"Our outfit consists of the truck with five bodies, each capable of carrying 2,500 standard size brick, and with cradle and frame on the truck with which to handle these bodies. The operation is as follows:

"The bodies are set on end with a loose wooden tail gate, held in place with two 2-inch pipes resting in brackets on the end of the body. The bricks are piled in these bodies, being cross piled so as to tie the tiers of brick together. The truck with the cradle in a vertical position backs up to the body; the operator puts the hoisting gear in operation and the body is lifted up to a horizontal position. When it arrives in proper position on the truck, the hoisting gear is automatically thrown out of action.



Snap Shots at the Plant of Somers Brick Company, Atlantic City, N. J.

"On arriving at the job the process is reversed and the body stood on the end in the desired location. In this position the weight of the bricks rests on the wooden tail gate, which has 4x4's across the bottom. These rest on the ground and support the weight of the load and leave the two 2-inch pipes loose so that they can be removed. When these are removed the power hoist is put in operation, the body lifted from the load and the entire load left in a neatly packed pile resting on the wooden tail gate.

"It takes about three minutes to load or unload the bodies from the truck. Recently the writer saw this truck make a round trip from the job to the car, a distance of about twelve squares, in twenty minutes. This included picking up the body at the freight car, traveling to the job, dropping the load, getting tickets signed and returning to the car.

"It is difficult for us to keep the bodies loaded fast enough to keep the truck working all the time, but we can easily deliver 32,000 brick a day in ordinary hauls around town from the cars.

"We anticipate in the near future we will handle most of our brick from our yard at Bakersville to Atlantic City, a distance of about ten miles, on these trucks. This will eliminate the freight charge and one extra handling of brick. The truck and unloading device have worked perfectly during the six weeks we have had it in operation.

"You will notice by the illustrations that we use a Mathews Gravity Carrier to deliver the bricks from the car to the man who is loading the bodies. This expedites delivery and lessens the labor, two important factors."

The Truck System Expedites Delivery.

The illustrations which are shown in these pages speak for themselves, but since the system of handling brick in bulk is new to some of the readers of this journal it may be well to give a further brief description of the operation of this labor-saving brick handling device in connection with motor trucks.

First, one body may be loaded while the other is in transit, thus it may be seen that the motor truck engine runs continuously, it deposits a load of brick at the delivery end and at the loading end trades an empty body for a loaded body, the bodies are loaded while they stand on the end and convenient

General Office of the Somers Brick & Lumber Co., Hubert Somers in the Foreground.

Mr. Warren Somers and Party of Brickyard Visitors at Plant of Somers Brick Company.

Loading Cars at Clay Bank.

Superintendent Elton Braddock in Brickyard Uniform.

Hauling Empty Cars from Foot of Incline to Clay Pit.

Coal Cars on Siding Near Kilns.

to the pile or kiln of brick, through the operation of the entire system it may be seen that gravity is given every possible advantage.

The labor situation throughout the country need not be commented upon at this time, all we say in this regard, is that this system is a labor saver and the brick manufacturer who can take advantage of labor-saving devices in this stage of "American History" is indeed fortunate.

There are many brick manufacturers who are unfortunately situated in regard to their hauling problems and may not be in position to take advantage of such labor-saving devices as are shown here, on the other hand there are many manufacturers who may take advantage of the various labor-saving devices and improved methods of manufacturing and thereby save considerable worry, time, labor and money.

There has been much discussion recently of our American railroad problems, these problems are familiar to most of us and while we do not like to take a pessimistic view of anything, it is well enough to look facts squarely in the face.

It is the writer's belief that at an early period motor trucks will be summoned to assist the railway company on short hauls, these summons may come in the form of higher freight rates or from shortage of cars from the scarcity of labor or from poor, undependable service.

The manufacturer who can motorize his plant is in position to give his customer best service and secure highest prices for his product, we believe that the wise manufacturer of today will consider and install labor-saving devices of all kinds.

The accompanying illustrations show brick being handled in bulk. The bodies hold from 2,000 to 2,500 building brick.

A Visit to the Brick Plant.

Brickmakers visiting Atlantic City should make it a point to visit Somers Brothers' brick plant. The drive is a very pleasant one. On the way the Country Club is passed, and if time will permit, it will afford a pleasant siesta and a game of golf, if one is so inclined, the links being exceptionally attractive. The plant is of the old type, but is orderly and well kept, being under the supervision of Elton Braddock. The clay is dug with an Erie steam shovel, which has proven a great labor saver, and hauled to the plant in two-yard dump cars where it is passed through a Potts disintegrator, thence through the usual pug mill, and a Martin machine. Steam dryers are used and the brick are burned in square up-draft kilns, from which they go to freight cars. When visiting the plant some years ago we predicted that the old kilns would give way to the continuous kiln, but that has not come true as yet.

REDUCING ACCIDENTS.

We have had safety week programs and a whole mass of propaganda calculated to lessen the number of accidents. When we come to a show down however we find the best progress being made through business lines and incidentally at that it comes through insurance companies.

The best progress in accident prevention is that growing out of the competition between accident insurance companies and between what is termed the old line companies and the mutual companies. They are competing sharply for business, and since one point involved in getting business is the cost of such insurance, there is a systematic effort to reduce cost through lessening the hazard just as we have in fire insurance.

Trained experts are called in and recommend changes and safeguards which will make practical a lower premium rate of insurance. The net result is to reduce the danger of accidents. So in the final analysis the greatest agencies we have for accident prevention is in study, research and counsel of insurance companies carrying these risks.

FINE OLD BRICK HOME IN WHICH GOVERNOR COX OF OHIO WAS BORN.

During the present year's political pot boiling there will be much difference in opinions and many expressions of it, some mild and some heated, and a lot of friction and fireworks. However, there is one thing both sides of the two important political parties can agree on, and that is the next president will come from Ohio, which is a good state and a state important in the development of the clayworking industry.

Also it was the capital of this state which held the gathering of the N. B. M. A. clans at the last annual convention, and during this convention one of the speakers whose talk at the banquet was very enjoyable was Hon. James M. Cox, who has since been named to lead the democratic ticket for president.

Whatever may be said for or against him as a presidental candidate, we have evidence that he was started off right in life because he was born and reared in a good, substantial brick house, a building which should furnish a splendid argumentative illustration for the common brick folks in exploiting their product. It is one of the good, old, homey structures standing as a testimony to the durability and desirability of brick for home building.

The lumber fraternity has already claimed intimate relationship with Harding, nominee of the Republican party, because he has been and still is interested in the retail lumber business in Ohio. There has been no claim put forth yet that either Harding or Cox are interested in the clay working industry, but we have evidence that the parents of nominee Cox had a proper regard for this industry and recognized the advisability of building with brick because the Cox home, the birthplace of the Democratic nominee, is a splendid example of some of our early brick houses. It stands today one of the pleasing landmarks of Butler County. Some of the presidents and presidental nominees of the past were born in log cabins, but if the world moves as it should most of the presidents of the future should be and will be born in brick homes.

OBITUARY.

WELL KNOWN BRICK MAN KILLED IN AUTOMOBILE ACCIDENT.

We are in receipt of a letter from Paul V. Carpenter, of Jacksonville, Fla., telling of the death of his father, Charles H. Carpenter, of that city. Mr. Carpenter was in an automobile with another son, Alvin, who was driving, when the car collided with a large truck with such force that Mr. Carpenter, who was sitting in the rear seat, was thrown to the street and the wheels of the heavy truck passed over his chest and stomach. He was rushed to the hospital where he died three hours later.

Mr. Carpenter was an old-time brick man, having been general manager of the Surban Brick Co., of Wheeling, W. Va., for twenty-five years previous to moving to Florida a few years ago. He was president of the Callahan Brick Co., of Callahan, Florida, and had just completed a half million dollar plant for the Gamble & Stockton Company at Columbus, Ga. He was an old-time member of the N. B. M. A., and before moving down south was a regular attendant at the annual meetings. He is survived by a wife and two sons, one of whom, Paul V. Carpenter, was associated with him in the brick plant, and will carry on the brick business.

Burning Clay Wares

by

Ellis Lovejoy

Written for The Clay-Worker.

THE CLAY-WORKER.

TABLES OF RECTANGLES IN EQUIVALENT CIRCLES.

THE ducts with which the engineer has to deal are quite as often rectangular as circular, and the following tables in conjunction with the Equalization Tables enables one to get the necessary data for rectangles.

The ducts with which the engineer has to deal are quite as often rectangular as circular, and the following tables in conjunction with the Equalization Tables enables one to get the necessary data for rectangles.

The numbers across the top and in the left-hand column of each table are the respective sides of the rectangles. The numbers in the body of the tables are the diameters of equivalent circles.

The use of the tables is best shown by illustrations.

Suppose we have a square stack for a down-draft kiln and wish to properly proportion the kiln floor ducts, and also to make the main draft flue a rectangle with unequal sides. We will assume the stack to be 36 inches square. The main draft flue in the kiln should be equivalent in size. In table 8, opposite 36 on the left, in the column headed by 36, we find the diameter of the equivalent circle to be 39.7 We may be limited in the depth of the main draft flue, or the arrangement may limit us in the width. Assume that we may make the draft flue 48 inches deep, what should be the other dimension?

In table 6, opposite 48 in the left-hand column, we find 39.3 under the column headed by 27, and 40.1 in the column headed by 28. Since the circle equivalent to the stack is 39.7 inches in diameter, the width of the draft flue having a depth of 48 inches will be between 27 inches and 28 inches.

We may assume a width of 24 inches for the draft flue and in table 6 in the column headed by 24 we find 39.7 to be the equivalent circle for 56 inches, which is the proper depth for the flue if the width is 24 inches.

Let us assume that there are twenty kiln floor ducts to be

Table 1.

	1	2	3	4	5	6	7	8	9	10
1	1.1	1.4	1.8	2.1	2.3	2.5	2.7	2.8	3.0	3.1
2	1.4	2.2	2.7	3.1	3.4	3.7	4.0	4.2	4.4	4.6
3	1.8	2.7	3.3	3.8	4.2	4.6	5.0	5.3	5.6	5.8
4	2.1	3.1	3.8	4.4	4.9	5.4	5.8	6.1	6.5	6.8
5	2.3	3.4	4.2	4.9	5.5	6.0	6.5	6.9	7.3	7.7
6	2.5	3.7	4.6	5.4	6.0	6.6	7.1	7.6	8.1	8.5
7	2.7	4.0	5.0	5.8	6.5	7.1	7.7	8.2	8.7	9.2
8	2.8	4.2	5.3	6.1	6.9	7.6	8.2	8.8	9.3	9.8
9	3.0	4.4	5.6	6.5	7.3	8.1	8.7	9.3	9.9	10.4
10	3.1	4.6	5.8	6.8	7.7	8.5	9.2	9.8	10.4	11.0
11	3.2	4.7	6.1	7.1	8.1	8.9	9.6	10.3	10.9	11.5
12	3.4	5.0	6.3	7.4	8.4	9.2	10.0	10.7	11.4	12.0
13	3.5	5.2	6.5	7.7	8.7	9.6	10.4	11.1	11.9	12.5
14	3.6	5.4	6.7	7.9	9.0	9.9	10.7	11.5	12.3	13.0
15	3.7	5.5	6.9	8.2	9.3	10.2	11.1	11.9	12.7	13.4
16	3.8	5.7	7.2	8.4	9.5	10.5	11.5	12.3	13.1	13.8
17	3.9	5.8	7.3	8.7	9.8	10.8	11.8	12.7	13.5	14.2
18	4.0	6.0	7.5	8.9	10.1	11.1	12.1	13.0	13.9	14.6
19	4.1	6.1	7.7	9.1	10.4	11.4	12.4	13.3	14.2	15.0
20	4.2	6.2	7.9	9.2	10.6	11.7	12.7	13.6	14.5	15.4
21	4.2	6.3	8.0	9.4	10.8	12.0	13.0	13.9	14.9	15.8
22	4.3	6.5	8.2	9.6	11.0	12.2	13.3	14.2	15.2	16.1
23	4.4	6.6	8.4	9.8	11.2	12.4	13.5	14.5	15.5	16.4
24	4.5	6.7	8.5	10.0	11.4	12.6	13.8	14.8	15.8	16.7
25	4.5	6.8	8.7	10.2	11.6	12.8	14.0	15.1	16.1	17.0
26	4.6	6.9	8.8	10.4	11.8	13.0	14.3	15.4	16.4	17.3
27	4.7	7.1	8.9	10.6	12.0	13.2	14.5	15.7	16.7	17.6
28	4.7	7.2	9.1	10.7	12.2	13.4	14.8	15.9	17.0	17.9
29	4.8	7.3	9.2	10.9	12.4	13.6	15.0	16.2	17.2	18.2
30	4.9	7.4	9.4	11.0	12.6	13.8	15.2	16.4	17.5	18.5

Table 2.

	1	2	3	4	5	6	7	8	9	10
31	5.0	7.5	9.5	11.2	12.7	14.0	15.4	16.7	17.8	18.8
32	5.0	7.6	9.6	11.4	12.9	14.3	15.6	16.9	18.0	19.1
33	5.1	7.7	9.7	11.5	13.1	14.5	15.8	17.1	18.3	19.3
34	5.2	7.8	9.8	11.7	13.2	14.7	16.1	17.3	18.5	19.6
35	5.2	7.9	9.9	11.8	13.4	14.9	16.3	17.5	18.7	19.8
36	5.3	8.0	10.1	11.9	13.6	15.1	16.5	17.8	19.0	20.1
37	5.3	8.0	10.2	12.1	13.8	15.3	16.6	18.0	19.2	20.4
38	5.4	8.1	10.3	12.2	13.9	15.4	16.8	18.2	19.4	20.6
39	5.5	8.2	10.4	12.3	14.1	15.6	17.0	18.4	19.6	20.8
40	5.5	8.3	10.5	12.5	14.2	15.8	17.2	18.6	19.9	21.1
41	5.6	8.4	10.6	12.6	14.3	15.9	17.4	18.8	20.1	21.3
42	5.6	8.5	10.7	12.7	14.4	16.1	17.6	19.0	20.3	21.5
43	5.7	8.6	10.8	12.9	14.6	16.3	17.8	19.2	20.5	21.7
44	5.7	8.6	10.9	13.0	14.7	16.4	17.9	19.4	20.7	22.0
45	5.8	8.7	11.1	13.1	14.9	16.6	18.1	19.5	20.9	22.2
46	5.8	8.8	11.2	13.2	15.1	16.7	18.3	19.7	21.1	22.4
47	5.9	8.9	11.3	13.3	15.2	16.9	18.5	19.9	21.3	22.6
48	5.9	8.9	11.4	13.5	15.4	17.0	18.6	20.1	21.5	22.8
49	6.0	9.0	11.5	13.6	15.5	17.2	18.8	20.3	21.7	23.0
50	6.0	9.1	11.6	13.8	15.6	17.3	18.9	20.5	21.9	23.2
51	6.0	9.2	11.7	13.9	15.7	17.5	19.1	20.7	22.1	23.4
52	6.1	9.2	11.8	13.9	15.9	17.6	19.3	20.8	22.3	23.6
53	6.2	9.3	11.9	14.0	16.0	17.8	19.4	21.0	22.4	23.8
54	6.2	9.4	11.9	14.1	16.2	17.9	19.6	21.1	22.6	24.0
55	6.3	9.5	12.0	14.2	16.3	18.0	19.7	21.3	22.8	24.2
56	6.3	9.5	12.1	14.3	16.3	18.2	19.9	21.5	23.0	24.4
57	6.4	9.6	12.2	14.4	16.5	18.3	20.0	21.6	23.1	24.6
58	6.4	9.7	12.3	14.5	16.6	18.4	20.2	21.8	23.3	24.8
59	6.4	9.7	12.4	14.6	16.7	18.6	20.3	21.9	23.5	24.9
60	6.5	9.8	12.5	14.8	16.8	18.7	20.5	22.1	23.7	25.1

drained by the main draft flue and the stack. The stack and draft flue equivalent circle is 39.7 inches as shown above. We wish to find the proper size for twenty rectangular floor ducts.

We turn to the equalization tables and find that a 40-inch circle is equivalent to twenty 12-inch circles. Twelve inches then is the diameter of the equivalent circle for the ducts.

Table 3.

	11	12	13	14	15	16	17	18	19	20
1	3.2	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2
2	4.7	5.0	5.2	5.4	5.5	5.7	5.8	6.0	6.1	6.2
3	6.1	6.3	6.5	6.7	6.9	7.2	7.3	7.5	7.7	7.9
4	7.1	7.4	7.7	7.9	8.2	8.4	8.7	8.9	9.1	9.2
5	8.1	8.4	8.7	9.0	9.3	9.5	9.8	10.1	10.4	10.6
6	8.9	9.2	9.6	9.9	10.2	10.5	10.8	11.1	11.4	11.7
7	9.6	10.0	10.4	10.7	11.1	11.5	11.8	12.1	12.4	12.7
8	10.3	10.7	11.1	11.5	11.9	12.3	12.7	13.0	13.3	13.6
9	10.9	11.4	11.9	12.3	12.7	13.1	13.5	13.9	14.2	14.5
10	11.5	12.0	12.5	13.0	13.4	13.8	14.2	14.6	15.0	15.4
11	12.1	12.7	13.2	13.7	14.1	14.6	15.0	15.4	15.8	16.2
12	12.7	13.3	13.8	14.3	14.7	15.2	15.7	16.1	16.5	16.9
13	13.2	13.8	14.3	14.9	15.4	15.9	16.3	16.8	17.2	17.7
14	13.7	14.3	14.9	15.4	16.0	16.5	17.0	17.4	17.9	18.4
15	14.1	14.7	15.4	16.0	16.5	17.1	17.6	18.1	18.6	19.0
16	14.6	15.2	15.9	16.5	17.1	17.6	18.2	18.7	19.2	19.7
17	15.0	15.7	16.3	17.0	17.6	18.2	18.7	19.3	19.8	20.3
18	15.4	16.1	16.8	17.4	18.1	18.7	19.3	19.8	20.4	20.9
19	15.8	16.5	17.2	17.9	18.6	19.2	19.8	20.4	20.9	21.5
20	16.2	16.9	17.7	18.4	19.0	19.7	20.3	20.9	21.5	22.0
21	16.6	17.3	18.1	18.8	19.5	20.1	20.8	21.4	22.0	22.6
22	16.9	17.7	18.5	19.2	19.9	20.6	21.3	21.9	22.5	23.1
23	17.3	18.1	18.9	19.6	20.4	21.1	21.7	22.4	23.0	23.6
24	17.6	18.5	19.3	20.0	20.8	21.5	22.2	22.8	23.5	24.1
25	18.0	18.8	19.7	20.4	21.2	21.9	22.6	23.3	24.0	24.6
26	18.3	19.2	20.0	20.8	21.6	22.3	23.1	23.7	24.4	25.1
27	18.6	19.5	20.4	21.2	22.0	22.7	23.5	24.2	24.9	25.6
28	18.9	19.8	20.7	21.5	22.4	23.1	23.9	24.6	25.3	26.0
29	19.2	20.1	21.1	21.9	22.7	23.5	24.3	25.0	25.7	26.4
30	19.5	20.5	21.4	22.2	23.1	23.9	24.7	25.4	26.2	26.9

Table 4.

	11	12	13	14	15	16	17	18	19	20
31	19.8	20.8	21.7	22.6	23.5	24.3	25.1	25.8	26.6	27.3
32	20.1	21.1	22.0	22.9	23.8	24.6	25.4	26.2	27.0	27.7
33	20.4	21.4	22.3	23.2	24.1	25.0	25.8	26.6	27.4	28.1
34	20.7	21.7	22.6	23.6	24.5	25.3	26.2	27.0	27.8	28.5
35	20.9	21.9	22.9	23.9	24.8	25.6	26.5	27.3	28.1	28.9
36	21.2	22.2	23.2	24.2	25.1	26.0	26.9	27.7	28.5	29.3
37	21.5	22.5	23.5	24.5	25.4	26.3	27.2	28.1	28.9	29.7
38	21.7	22.8	23.8	24.8	25.8	26.7	27.6	28.4	29.3	30.1
39	22.0	23.1	24.1	25.1	26.1	27.0	27.9	28.8	29.6	30.4
40	22.2	23.3	24.4	25.4	26.4	27.3	28.2	29.1	30.0	30.8
41	22.5	23.6	24.7	25.7	26.7	27.6	28.5	29.4	30.3	31.1
42	22.7	23.8	24.9	25.9	27.0	27.9	28.9	29.8	30.6	31.4
43	22.9	24.1	25.2	26.2	27.3	28.2	29.2	30.1	31.0	31.8
44	23.2	24.3	25.4	26.4	27.5	28.5	29.5	30.4	31.3	32.1
45	23.4	24.6	25.7	26.7	27.8	28.8	29.8	30.7	31.6	32.5
46	23.6	24.8	25.9	27.0	28.1	29.1	30.1	31.0	32.0	32.8
47	23.9	25.1	26.2	27.3	28.4	29.4	30.4	31.3	32.3	33.2
48	24.1	25.3	26.4	27.5	28.6	29.6	30.7	31.6	32.6	33.5
49	24.3	25.5	26.7	27.8	28.9	29.9	31.0	31.9	32.9	33.8
50	24.5	25.7	26.9	28.0	29.2	30.2	31.2	32.2	33.2	34.1
51	24.7	26.0	27.2	28.3	29.4	30.4	31.5	32.5	33.5	34.4
52	24.9	26.2	27.4	28.5	29.7	30.7	31.8	32.8	33.8	34.7
53	25.1	26.4	27.6	28.7	29.9	31.0	32.1	33.1	34.1	35.0
54	25.3	26.6	27.8	29.0	30.2	31.2	32.3	33.4	34.4	35.3
55	25.6	26.8	28.1	29.2	30.4	31.5	32.6	33.6	34.7	35.6
56	25.8	27.0	28.3	29.5	30.7	31.8	32.9	33.9	34.9	35.9
57	26.0	27.2	28.5	29.7	30.9	32.0	33.1	34.2	35.2	36.2
58	26.1	27.4	28.7	29.9	31.1	32.3	33.4	34.4	35.5	36.5
59	26.3	27.6	29.0	30.2	31.4	32.5	33.6	34.7	35.8	36.8
60	26.5	27.8	29.2	30.4	31.6	32.7	33.9	35.0	36.1	37.1

In building these ducts one or the other dimension will be limited. For instance, we may wish to use a 13-inch floor block and the width of the duct should be 9 inches. What depth must the duct be to equal a 12-inch circle?

In the column headed by 9 in the rectangle table 1 we find 11.9 to be the nearest circle to 12 inches, and the other dimension of the duct corresponding to this circle is 13 inches. The proper size for the kiln floor ducts is therefore 13 inches by 9 inches. It may be that the engineer is not limited in either width or depth, or he may be limited in both dimensions and wishes to get a compromise rectangle which will best meet the limits. The equivalent circle is 12 inches. He

Table 5.

	21	22	23	24	25	26	27	28	29	30
1	4.2	4.3	4.4	4.5	4.5	4.6	4.7	4.7	4.8	4.9
2	6.3	6.5	6.6	6.7	6.8	6.9	7.1	7.2	7.3	7.4
3	8.0	8.2	8.4	8.5	8.7	8.8	8.9	9.1	9.2	9.4
4	9.4	9.6	9.8	10.0	10.2	10.4	10.6	10.7	10.9	11.0
5	10.8	11.0	11.2	11.4	11.6	11.8	12.0	12.2	12.4	12.6
6	12.0	12.2	12.4	12.6	12.8	13.0	13.2	13.4	13.6	13.8
7	13.0	13.3	13.5	13.8	14.0	14.3	14.5	14.8	15.0	15.2
8	13.9	14.2	14.5	14.8	15.1	15.4	15.7	15.9	16.2	16.4
9	14.9	15.2	15.5	15.8	16.1	16.4	16.7	17.0	17.2	17.5
10	15.8	16.1	16.4	16.7	17.0	17.3	17.6	17.9	18.2	18.5
11	16.6	16.9	17.3	17.6	18.0	18.3	18.6	18.9	19.2	19.5
12	17.3	17.7	18.1	18.5	18.8	19.2	19.5	19.8	20.1	20.5
13	18.1	18.5	18.9	19.3	19.7	20.0	20.4	20.7	21.1	21.4
14	18.8	19.2	19.6	20.0	20.4	20.8	21.2	21.5	21.9	22.2
15	19.5	19.9	20.4	20.8	21.2	21.6	22.0	22.4	22.7	23.1
16	20.1	20.6	21.1	21.5	21.9	22.3	22.7	23.1	23.5	23.9
17	20.8	21.3	21.7	22.2	22.6	23.1	23.5	23.9	24.3	24.7
18	21.4	21.9	22.4	22.8	23.3	23.7	24.2	24.6	25.0	25.4
19	22.0	22.5	23.0	23.5	24.0	24.4	24.9	25.3	25.7	26.2
20	22.6	23.1	23.6	24.1	24.6	25.1	25.6	26.0	26.4	26.9
21	23.1	23.7	24.2	24.7	25.2	25.7	26.2	26.7	27.1	27.6
22	23.7	24.2	24.7	25.3	25.8	26.3	26.8	27.3	27.8	28.2
23	24.2	24.7	25.3	25.9	26.4	26.9	27.4	27.9	28.4	28.9
24	24.7	25.3	25.9	26.4	27.0	27.5	28.0	28.5	29.0	29.5
25	25.2	25.8	26.4	27.0	27.5	28.1	28.6	29.1	29.6	30.1
26	25.7	26.3	26.9	27.5	28.1	28.6	29.2	29.7	30.2	30.7
27	26.2	26.8	27.4	28.0	28.6	29.2	29.7	30.3	30.8	31.3
28	26.7	27.3	27.9	28.5	29.1	29.7	30.3	30.8	31.4	31.9
29	27.1	27.8	28.4	29.0	29.6	30.2	30.8	31.4	31.9	32.5
30	27.6	28.2	28.9	29.5	30.1	30.7	31.3	31.9	32.5	33.0

Table 6.

	21	22	23	24	25	26	27	28	29	30
31	28.0	28.7	29.3	30.0	30.6	31.2	31.8	32.4	33.0	33.6
32	28.4	29.1	29.8	30.5	31.1	31.7	32.3	32.9	33.5	34.1
33	28.9	29.5	30.2	30.9	31.6	32.2	32.8	33.4	34.1	34.6
34	29.3	30.0	30.7	31.4	32.0	32.7	33.3	33.9	34.6	35.2
35	29.7	30.4	31.1	31.8	32.5	33.1	33.8	34.4	35.1	35.7
36	30.1	30.8	31.5	32.2	32.9	33.6	34.3	34.9	35.6	36.2
37	30.5	31.2	32.0	32.7	33.4	34.1	34.7	35.4	36.0	36.7
38	30.9	31.6	32.4	33.1	33.8	34.5	35.2	35.8	36.5	37.1
39	31.2	32.0	32.8	33.5	34.2	34.9	35.6	36.3	37.0	37.6
40	31.6	32.4	33.2	33.9	34.6	35.3	36.0	36.7	37.4	38.1
41	32.0	32.7	33.5	34.3	35.1	35.8	36.5	37.2	37.9	38.5
42	32.3	33.1	33.9	34.7	35.5	36.2	36.9	37.6	38.3	39.0
43	32.7	33.5	34.3	35.1	35.9	36.6	37.3	38.0	38.8	39.4
44	33.0	33.9	34.7	35.5	36.2	37.0	37.7	38.4	39.2	39.9
45	33.4	34.2	35.1	35.8	36.6	37.4	38.2	38.9	39.6	40.3
46	33.7	34.6	35.4	36.2	37.0	37.8	38.6	39.3	40.0	40.7
47	34.1	34.9	35.8	36.6	37.4	38.1	38.9	39.7	40.4	41.1
48	34.4	35.3	36.1	36.9	37.8	38.5	39.3	40.1	40.8	41.6
49	34.7	35.6	36.5	37.3	38.1	38.9	39.7	40.5	41.2	42.0
50	35.1	35.9	36.8	37.7	38.5	39.3	40.1	40.9	41.6	42.4
51	35.4	36.3	37.2	38.0	38.9	39.7	40.5	41.3	42.0	42.8
52	35.7	36.6	37.5	38.3	39.2	40.0	40.8	41.6	42.4	43.2
53	36.0	36.9	37.8	38.7	39.6	40.4	41.2	42.0	42.8	43.6
54	36.3	37.2	38.1	39.0	39.9	40.7	41.6	42.4	43.2	44.0
55	36.6	37.5	38.5	39.3	40.2	41.1	41.9	42.7	43.6	44.3
56	36.9	37.8	38.8	39.7	40.6	41:4	42.3	43.1	43.9	44.7
57	37.2	38.2	39.1	40.0	40.9	41.8	42.6	43.5	44.3	45.1
58	37.5	38.5	39.4	40.3	41.2	42.1	43.0	43.8	44.6	45.5
59	37.8	38.8	39.7	40.6	41.6	42.4	43.3	44.2	45.0	45.8
60	38.1	39.1	40.0	40.9	41.9	42.8	43.7	44.5	45.3	46.2

may start with a square which he will find to be 11 inches in table 3, equivalent to a 12.1-inch circle. Starting with the latter circle in the body of the table and running up diagonally to the right he will find a 12-inch circle equivalent to a 10-inch by 12-inch rectangle, or a 11.9 circle is equivalent to a 9-inch by 13-inch rectangle, and it is also equivalent to an 8-inch by

Table 7.

	31	32	33	34	35	36	37	38	39	40
1	5.0	5.0	5.1	5.2	5.2	5.3	5.3	5.4	5.5	5.5
2	7.5	7.6	7.7	7.8	7.9	8.0	8.0	8.1	8.2	8.3
3	9.5	9.6	9.7	9.8	9.9	10.1	10.2	10.3	10.4	10.5
4	11.2	11.4	11.5	11.7	11.8	11.9	12.1	12.2	12.3	12.5
5	12.7	12.9	13.1	13.2	13.4	13.6	13.8	13.9	14.1	14.2
6	14.0	14.3	14.5	14.7	14.9	15.1	15.3	15.4	15.6	15.8
7	15.4	15.6	15.8	16.1	16.3	16.5	16.6	16.8	17.0	17.2
8	16.7	16.9	17.1	17.3	17.5	17.8	18.0	18.2	18.4	18.6
9	17.8	18.0	18.3	18.5	18.7	19.0	19.2	19.4	19.6	19.9
10	18.8	19.1	19.3	19.6	19.8	20.1	20.4	20.6	20.8	21.1
11	19.8	20.1	20.4	20.7	20.9	21.2	21.5	21.7	22.0	22.2
12	20.8	21.1	21.4	21.7	21.9	22.2	22.5	22.8	23.1	23.3
13	21.7	22.0	22.3	22.6	22.9	23.2	23.5	23.8	24.1	24.4
14	22.6	22.9	23.2	23.6	23.9	24.2	24.5	24.8	25.1	25.4
15	23.5	23.8	24.1	24.5	24.8	25.1	25.4	25.8	26.1	26.4
16	24.3	24.6	25.0	25.3	25.6	26.0	26.3	26.7	27.0	27.3
17	25.1	25.4	25.8	26.2	26.5	26.9	27.2	27.6	27.9	28.2
18	25.8	26.2	26.6	27.0	27.3	27.7	28.1	28.4	28.8	29.1
19	26.6	27.0	27.4	27.8	28.1	28.5	28.9	29.3	29.6	30.0
20	27.3	27.7	28.1	28.5	28.9	29.3	29.7	30.1	30.4	30.8
21	28.0	28.4	28.9	29.3	29.7	30.1	30.5	30.9	31.2	31.6
22	28.7	29.1	29.5	30.0	30.4	30.8	31.2	31.6	32.0	32.4
23	29.3	29.8	30.2	30.7	31.1	31.5	32.0	32.4	32.8	33.2
24	30.0	30.5	30.9	31.4	31.8	32.2	32.7	33.1	33.5	33.9
25	30.6	31.1	31.6	32.0	32.5	32.9	33.4	33.8	34.2	34.6
26	31.2	31.7	32.2	32.7	33.1	33.6	34.1	34.5	34.9	35.3
27	31.8	32.3	32.8	33.3	33.8	34.3	34.7	35.2	35.6	36.0
28	32.4	32.9	33.4	33.9	34.4	34.9	35.4	35.8	36.3	36.7
29	33.0	33.5	34.1	34.6	35.1	35.6	36.0	36.5	37.0	37.4
30	33.6	34.1	34.6	35.2	35.7	36.2	36.7	37.1	37.6	38.1

Table 9.

	41	42	43	44	45	46	47	48	49	50
1	5.6	5.6	5.7	5.7	5.8	5.8	5.9	5.9	6.0	6.0
2	8.4	8.5	8.6	8.6	8.7	8.8	8.9	8.9	9.0	9.1
3	10.6	10.7	10.8	10.9	11.1	11.2	11.3	11.4	11.5	11.6
4	12.6	12.7	12.9	13.0	13.1	13.2	13.3	13.5	13.6	13.8
5	14.3	14.4	14.6	14.7	14.9	15.1	15.2	15.4	15.5	15.6
6	15.9	16.1	16.3	16.4	16.6	16.7	16.9	17.0	17.2	17.3
7	17.4	17.6	17.8	17.9	18.1	18.3	18.5	18.6	18.8	18.9
8	18.8	19.0	19.2	19.4	19.5	19.7	19.9	20.1	20.3	20.5
9	20.1	20.3	20.5	20.7	20.9	21.1	21.3	21.5	21.7	21.9
10	21.3	21.5	21.7	22.0	22.2	22.4	22.6	22.8	23.0	23.2
11	22.5	22.7	22.9	23.2	23.4	23.6	23.9	24.1	24.3	24.5
12	23.6	23.8	24.1	24.3	24.6	24.8	25.1	25.3	25.5	25.7
13	24.7	24.9	25.2	25.4	25.7	25.9	26.2	26.4	26.7	26.9
14	25.7	25.9	26.2	26.4	26.7	27.0	27.3	27.5	27.8	28.0
15	26.7	27.0	27.3	27.5	27.8	28.1	28.4	28.6	28.9	29.2
16	27.6	27.9	28.2	28.5	28.8	29.1	29.4	29.6	29.9	30.2
17	28.5	28.9	29.2	29.5	29.8	30.1	30.4	30.7	31.0	31.2
18	29.4	29.8	30.1	30.4	30.7	31.0	31.3	31.6	31.9	32.2
19	30.3	30.6	31.0	31.3	31.6	32.0	32.3	32.6	32.9	33.2
20	31.1	31.4	31.8	32.1	32.5	32.8	33.2	33.5	33.8	34.1
21	32.0	32.3	32.7	33.0	33.4	33.7	34.1	34.4	34.7	35.1
22	32.7	33.1	33.5	33.9	34.2	34.6	34.9	35.3	35.6	35.9
23	33.5	33.9	34.3	34.7	35.1	35.4	35.8	36.1	36.5	36.8
24	34.3	34.7	35.1	35.5	35.8	36.2	36.6	36.9	37.3	37.7
25	35.1	35.5	35.9	36.2	36.6	37.0	37.4	37.8	38.1	38.5
26	35.8	36.2	36.6	37.0	37.4	37.8	38.1	38.5	38.9	39.3
27	36.5	36.9	37.3	37.7	38.2	38.6	38.9	39.3	39.7	40.1
28	37.2	37.6	38.0	38.4	38.9	39.3	39.7	40.1	40.5	40.9
29	37.9	38.3	38.8	39.2	39.6	40.0	40.4	40.8	41.2	41.6
30	38.5	39.0	39.4	39.9	40.3	40.7	41.1	41.6	42.0	42.4

15-inch rectangle, or a 12.1-inch circle is equivalent to a 7-inch by 18-inch rectangle. He may also work diagonally down to the left and pick out the dimensions which best suit his conditions. For instance, in table 1, in the last column, we find that a 12-inch circle is equivalent to a 10-inch by 12-inch rectangle, or, in the next column, a 11.9-inch circle is equivalent to a 9-inch by 13-inch rectangle, and, next, to an 8-inch by 15-inch rectangle. Further scanning shows that the approximate size of the rectangle may be 7 inches by 18 inches, 6 inches by 21 inches, 5 inches by 27 inches, or, turning to table 2, we find the rectangle may be 4 inches by 36 or 37 inches, 3 inches by 55 inches. He may wish narrow slots 2 inches wide, but finds that the depth exceeds the limits of the table. He may double the dimension, and find the corresponding other dimension and doubling this get approximately the depth required. In table 2 for a width of 4 inches the depth will be 36 inches or 37 inches and the proper depth for a 2-inch slot would be 72 inches or 74 inches. In such extreme dimensions there is always likely to be an error since the table is only worked out to the nearest tenth.

It usually happens that the tables are exceeded only in larger flues and the error in such instances is slight.

The tables may be checked up by taking dimensions within the limits and doubling and halving them. For example,

Table 8.

	31	32	33	34	35	36	37	38	39	40
31	34.1	34.7	35.2	35.8	36.3	36.8	37.3	37.8	38.2	38.7
32	34.7	35.2	35.8	36.3	36.8	37.4	37.9	38.4	38.9	39.4
33	35.2	35.8	36.3	36.9	37.4	38.0	38.5	39.0	39.5	40.0
34	35.8	36.3	36.9	37.4	38.0	38.5	39.1	39.6	40.1	40.6
35	36.3	36.8	37.4	38.0	38.6	39.1	39.6	40.2	40.7	41.2
36	36.8	37.4	38.0	38.5	39.1	39.7	40.2	40.7	41.3	41.8
37	37.3	37.9	38.5	39.1	39.6	40.2	40.8	41.3	41.8	42.4
38	37.8	38.4	39.0	39.6	40.2	40.7	41.3	41.9	42.4	42.9
39	38.2	38.9	39.5	40.1	40.7	41.3	41.8	42.4	43.0	43.5
40	38.7	39.4	40.0	40.6	41.2	41.8	42.4	42.9	43.5	44.1
41	39.2	39.8	40.5	41.1	41.7	42.3	42.9	43.5	44.0	44.6
42	39.7	40.3	41.0	41.6	42.2	42.8	43.4	44.0	44.6	45.1
43	40.1	40.8	41.4	42.1	42.7	43.3	43.9	44.5	45.1	45.7
44	40.6	41.2	41.9	42.5	43.2	43.8	44.4	45.0	45.6	46.2
45	41.0	41.7	42.4	43.0	43.6	44.3	44.9	45.5	46.1	46.7
46	41.4	42.1	42.8	43.5	44.1	44.8	45.4	46.0	46.6	47.2
47	41.9	42.6	43.3	43.9	44.6	45.2	45.9	46.5	47.1	47.7
48	42.3	43.0	43.7	44.4	45.0	45.7	46.3	47.0	47.6	48.2
49	42.7	43.4	44.1	44.8	45.5	46.1	46.8	47.4	48.1	48.7
50	43.1	43.9	44.6	45.2	45.9	46.6	47.3	47.9	48.6	49.2
51	43.5	44.3	45.0	45.7	46.4	47.1	47.7	48.4	49.0	49.7
52	43.9	44.7	45.4	46.1	46.8	47.5	48.2	48.8	49.5	50.1
53	44.3	45.1	45.8	46.5	47.2	47.9	48.6	49.3	50.0	50.6
54	44.7	45.5	46.2	46.9	47.7	48.4	49.1	49.7	50.4	51.1
55	45.1	45.9	46.6	47.4	48.1	48.8	49.5	50.2	50.9	51.5
56	45.5	46.3	47.0	47.8	48.5	49.2	49.9	50.6	51.3	52.0
57	45.9	46.7	47.4	48.2	48.9	49.6	50.4	51.1	51.8	52.4
58	46.3	47.0	47.8	48.6	49.3	50.0	50.8	51.5	52.2	52.9
59	46.6	47.4	48.2	48.9	49.7	50.4	51.2	51.9	52.6	53.3
60	47.0	47.8	48.6	49.3	50.1	50.8	51.6	52.3	53.0	53.7

Table 10.

	41	42	43	44	45	46	47	48	49	50
31	39.2	39.7	40.1	40.6	41.0	41.4	41.9	42.3	42.7	43.1
32	39.8	40.3	40.8	41.2	41.7	42.1	42.6	43.0	43.4	43.9
33	40.5	41.0	41.4	41.9	42.4	42.8	43.3	43.7	44.1	44.6
34	41.1	41.6	42.1	42.5	43.0	43.5	43.9	44.4	44.8	45.2
35	41.7	42.2	42.7	43.2	43.6	44.1	44.6	45.0	45.5	45.9
36	42.3	42.8	43.3	43.8	44.3	44.8	45.2	45.7	46.1	46.6
37	42.9	43.4	43.9	44.4	44.9	45.4	45.9	46.3	46.8	47.3
38	43.5	44.0	44.5	45.0	45.5	46.0	46.5	47.0	47.4	47.9
39	44.0	44.6	45.1	45.6	46.1	46.6	47.1	47.6	48.1	48.6
40	44.6	45.1	45.7	46.2	46.7	47.2	47.7	48.2	48.7	49.2
41	45.2	45.7	46.2	46.8	47.3	47.8	48.3	48.8	49.3	49.8
42	45.7	46.3	46.8	47.4	47.9	48.4	48.9	49.4	49.9	50.4
43	46.2	46.8	47.4	47.9	48.4	49.0	49.5	50.0	50.5	51.0
44	46.8	47.4	47.9	48.5	49.0	49.5	50.1	50.6	51.1	51.6
45	47.3	47.9	48.4	49.0	49.6	50.1	50.7	51.2	51.7	52.2
46	47.8	48.4	49.0	49.5	50.1	50.7	51.2	51.7	52.3	52.8
47	48.3	48.9	49.5	50.1	50.7	51.2	5.18	52.3	52.9	53.4
48	48.8	49.4	50.0	50.6	51.2	51.7	52.3	52.9	53.4	54.0
49	49.3	49.9	50.5	51.1	51.7	52.3	52.9	53.4	54.0	54.5
50	49.8	50.4	51.0	51.6	52.2	52.8	53.4	54.0	54.5	55.1
51	50.3	50.9	51.5	52.1	52.7	53.3	53.9	54.5	55.1	55.6
52	50.8	51.4	52.0	52.6	53.3	53.8	54.4	55.0	55.6	56.2
53	51.3	51.9	52.5	53.1	53.8	54.3	54.9	55.5	56.1	56.7
54	51.7	52.4	53.0	53.6	54.3	54.9	55.5	56.0	56.6	57.2
55	52.2	52.8	53.5	54.1	54.7	55.3	56.0	56.6	57.2	57.7
56	52.7	53.3	54.0	54.6	55.2	55.8	56.5	57.1	57.7	58.3
57	53.1	53.8	54.4	55.1	55.7	56.3	56.9	57.6	58.2	58.8
58	53.6	54.2	54.9	55.5	56.2	56.8	57.4	58.1	58.7	59.3
59	54.0	54.7	55.3	56.0	56.7	57.3	57.9	58.5	59.2	59.8
60	54.4	55.1	55.8	56.5	57.1	57.8	58.4	59.0	59.7	60.3

a duct 40 by 60 as may be seen in table 12, has an equivalent circle of 53.7 inches, or the same is found in table 8. A 20 by 30 duct, which would be halving the dimensions of the above larger duct has an equivalent circle of 26.9 as shown in table 5, or in table 3. Doubling this equivalent circle we get 53.8 which practically checks the 40 by 60 dimensions. If therefore we had an 80-inch by 90-inch duct we would look up the equivalent circle for a 40 by 45 duct which we find in table 8 or table 10 to be 46.7, and the equivalent circle for the larger duct will be double this, or 93.4.

The several problems are as follows:

(1) Given a square duct or a rectangular one of fixed dimensions, we wish to find equivalent ducts having different dimensions. This is done, as has been shown, by finding in the tables of rectangles the equivalent circle for the duct given, and picking out equivalent circles diagonally up to the right or down to the left and taking the dimensions corresponding.

(2) Given a main duct, we wish to find the proper size of a fixed number of smaller ducts. This problem has been fully worked out above.

Table 11.

	51	52	53	54	55	56	57	58	59	60
1	6.0	6.1	6.2	6.2	6.3	6.3	6.4	6.4	6.4	6.5
2	9.2	9.2	9.3	9.4	9.5	9.5	9.6	9.7	9.7	9.8
3	11.7	11.8	11.9	11.9	12.0	12.1	12.2	12.3	12.4	12.5
4	13.9	13.9	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.8
5	15.7	15.9	16.0	16.2	16.3	16.3	16.5	16.6	16.7	16.8
6	17.5	17.6	17.8	17.9	18.0	18.2	18.3	18.4	18.6	18.7
7	19.1	19.3	19.4	19.6	19.7	19.9	20.0	20.2	20.3	20.5
8	20.7	20.8	21.0	21.1	21.3	21.5	21.6	21.8	21.9	22.1
9	22.1	22.3	22.4	22.6	22.8	23.0	23.1	23.3	23.5	23.7
10	23.4	23.6	23.8	24.0	24.2	24.4	24.6	24.8	24.9	25.1
11	24.7	24.9	25.1	25.3	25.6	25.8	26.0	26.1	26.3	26.5
12	26.0	26.2	26.4	26.6	26.8	27.0	27.2	27.4	27.6	27.8
13	27.2	27.4	27.6	27.8	28.1	28.3	28.5	28.7	29.0	29.2
14	28.3	28.5	28.7	29.0	29.2	29.5	29.7	29.9	30.2	30.4
15	29.4	29.7	29.9	30.2	30.4	30.7	30.9	31.1	31.4	31.6
16	30.4	30.7	31.0	31.2	31.5	31.8	32.0	32.3	32.5	32.7
17	31.5	31.8	32.1	32.3	32.6	32.9	33.1	33.4	33.6	33.9
18	32.5	32.8	33.1	33.4	33.6	33.9	34.2	34.4	34.7	35.0
19	33.5	33.8	34.1	34.4	34.7	34.9	35.2	35.5	35.8	36.1
20	34.4	34.7	35.0	35.3	35.6	35.9	36.2	36.5	36.8	37.1
21	35.4	35.7	36.0	36.3	36.6	36.9	37.2	37.5	37.8	38.1
22	36.3	36.6	36.9	37.2	37.5	37.8	38.2	38.5	38.8	39.1
23	37.2	37.5	37.8	38.1	38.5	38.8	39.1	39.4	39.7	40.0
24	38.0	38.3	38.7	39.0	39.3	39.7	40.0	40.3	40.6	40.9
25	38.9	39.2	39.6	39.9	40.2	40.6	40.9	41.2	41.6	41.9
26	39.7	40.0	40.4	40.7	41.1	41.4	41.8	42.1	42.4	42.8
27	40.5	40.8	41.2	41.6	41.9	42.3	42.6	43.0	43.3	43.7
28	41.3	41.6	42.0	42.4	42.7	43.1	43.5	43.8	44.2	44.5
29	42.0	42.4	42.8	43.2	43.6	43.9	44.3	44.6	45.0	45.3
30	42.8	43.2	43.6	44.0	44.3	44.7	45.1	45.5	45.8	46.2

(3) As a corollary to No. 2, we have small ducts or fixed dimensions and wish to know how many of them can be turned into a larger duct of fixed dimensions.

We first find the equivalent circle of the small duct and also that of the large duct from the tables of rectangles and from the equalization table determine how many of the smaller circles equal the larger circle.

(4) We have given the dimensions and number of small ducts and wish to determine the size of the main duct.

We first find the equivalent circle for the small ducts from the table of rectangles and then in the equalization table find the proper circle for the number of smaller circles, and finally, assuming one dimension of the main duct, we find in the table of rectangles the other dimension corresponding to the equivalent circle as found.

Should the dimension thus found be too large or too small for our purpose, we can change it by assuming a different dimension in the first instance, and thus we may pick out from the table of rectangles, dimensions, corresponding to the equivalent circle, which suit our purpose.

Should the sizes of the ducts exceed the limits of the tables, we can bring them within the limits by halving, and get the correct sizes by doubling the dimensions thus found, and this holds true in any proportional part.

TERRA COTTA PLANT TO RESUME OPERATIONS IN NORTHWEST.

The plant of the Northern Clay Company at Auburn, Wash., will resume operations in the manufacture of architectural terra cotta very shortly, after being closed for a period of a year and a half, during which time Paul D. Michel, president of the concern, has been in the East. He is now in Seattle completing arrangements for the reopening of the plant.

The decision to reopen comes as the result of a thorough canvass of the business operations of the Northwest. It being well known among architects that terra cotta is a permanent building material and much to be desired, and that with the business in view, there is every indication that the quality of terra cotta turned out in the past by the Northern Clay Company in such buildings as the Coliseum, Pantages Theater, Crystal Pool, Economic Building of the University of Washington, Joshua Green Building and the Frederick & Nelson Building will insure their full share of prospective business.

Table 12.

	51	52	53	54	55	56	57	58	59	60
31	43.5	43.9	44.3	44.7	45.1	45.5	45.9	46.3	46.6	47.0
32	44.3	44.7	45.1	45.5	45.9	46.3	46.7	47.0	47.4	47.8
33	45.0	45.4	45.8	46.2	46.6	47.0	47.4	47.8	48.2	48.6
34	45.7	46.1	46.5	46.9	47.4	47.8	48.2	48.6	48.9	49.3
35	46.4	46.8	47.2	47.7	48.1	48.5	48.9	49.3	49.7	50.1
36	47.1	47.5	47.9	48.4	48.8	49.2	49.6	50.0	50.4	50.8
37	47.7	48.2	48.6	49.1	49.5	49.9	50.4	50.8	51.2	51.6
38	48.4	48.8	49.3	49.7	50.2	50.6	51.1	51.5	51.9	52.3
39	49.0	49.5	50.0	50.4	50.9	51.3	51.8	52.2	52.6	53.0
40	49.7	50.1	50.6	51.1	51.5	52.0	52.4	52.9	53.3	53.7
41	50.3	50.8	51.3	51.7	52.2	52.7	53.1	53.6	54.0	54.4
42	50.9	51.4	51.9	52.4	52.8	53.3	53.8	54.2	54.7	55.1
43.	51.5	52.0	52.5	53.0	53.5	54.0	54.4	54.9	55.3	55.8
44	52.1	52.6	53.1	53.6	54.1	54.6	55.1	55.5	56.0	56.5
45	52.7	53.3	53.8	54.3	54.7	55.2	55.7	56.2	56.7	57.1
46	53.3	53.8	54.3	54.9	55.3	55.8	56.3	56.8	57.3	57.8
47	53.9	54.4	54.9	55.5	56.0	56.5	56.9	57.4	57.9	58.4
48	54.5	55.0	55.5	56.0	56.6	57.1	57.6	58.1	58.5	59.0
49	55.1	55.6	56.1	56.6	57.2	57.7	58.2	58.7	59.2	59.7
50	55.6	56.2	56.7	57.2	57.7	58.3	58.8	59.3	59.8	60.3
51	56.2	56.7	57.3	57.8	58.3	58.8	59.4	59.9	60.4	60.9
52	56.7	57.3	57.8	58.4	58.9	59.4	59.9	60.5	61.0	61.5
53	57.3	57.8	58.4	58.9	59.5	60.0	60.5	61.1	61.6	62.1
54	57.8	58.4	58.9	59.5	60.0	60.6	61.1	61.6	62.2	62.7
55	58.3	58.9	59.5	60.0	60.6	61.1	61.7	62.2	62.7	63.3
56	58.8	59.4	60.0	60.6	61.1	61.7	62.2	62.8	63.3	63.8
57	59.4	59.9	60.5	61.1	61.7	62.2	62.8	63.3	63.9	64.4
58	59.9	60.5	61.1	61.6	62.2	62.8	63.3	63.9	64.4	65.0
59	60.4	61.0	61.6	62.2	62.7	63.3	63.9	64.4	65.0	65.5
60	60.9	61.5	62.1	62.7	63.3	63.8	64.4	65.0	65.5	66.1

The plant and organization at Auburn is well equipped for the manufacture of the terra cotta, which has been produced there for ten years prior to the closing down.

The plant employs 75 to 100 men.

DOCTOR FREDRICK G. COTTRELL, DIRECTOR.

Doctor Fredrick G. Cottrell, who was nominated for director of the Bureau of Mines, Department of Interior, recently by President Wilson, was born in Oakland, Calif., June 10, 1877. He matriculated at the University of California in 1892 and while a student he gave special attention to chemistry. He has had experience as instructor in chemistry and seems well qualified generally for his position in the Bureau of Mines.

THE NEW JERSEY CLAYWORKERS'

Midsummer Meeting at Trenton Affords a Delightful Day of Good Fellowship—Important Technical Questions Discussed.

AS THE ACCOMPANYING group picture shows, there was a good attendance at the midsummer meeting of the New Jersey Clayworkers' convention and the Eastern Division of the American Ceramic Society. The sessions were held at the Trenton Country Club, an ideal place for such a gathering.

The meeting was called to order by President Hansen, and the program was followed with little or no variation. At the conclusion of each paper the subject under consideration was discussed pro and con, much valuable information being elicited by the queries and answers.

Those in Attendance at the Midsummer Meeting of the New Jersey Clayworkers' Association.

At noon a delightful luncheon was served on the porch of the club. It was entirely informal and very enjoyable. President Hansen called attention to the fact that a distinguished visitor was present in the person of the Secretary of the National Brick Manufacturers' Association. He said, "We are always glad to have Mr. Randall with us and will be glad to have a word from him." Mr. Randall responded in a felicitous manner and was followed by Mr. C. H. Cook, ex-president of the New Jersey Association, who commended the work of the Association during the past year and urged still greater effort in the interest of the industry. The assembly then adjourned to the lawn, where a photographer was in waiting.

The first speaker of the afternoon session was Dr. A. V. Bleininger of the Bureau of Standards, Washington, D. C., who gave an instructive address on "Studies of Raw Clay in the Raw State."

The ever interesting kiln question was discussed by Conrad Dressler, of the American Dressler Tunnel Kiln Co., of New York City, who presented a number of interesting lantern slides, showing the construction of the Dressler kiln, etc.

The following papers were presented:

PRESIDENT ABEL HANSEN'S ADDRESS.

Gentlemen of the Convention:

You will remember that at our December meeting our outgoing president spoke on tariff questions, and I hope none of us have forgotten this question, as this is a real business question of today. You will also remember that I spoke a few words on co-operation. I am glad to make my report to you at this time on our Ceramic Building, but before I go any further I want to thank you all for your assistance and co-operation in this work.

We have succeeded in getting $100,000 from the State and $12,000 per year hereafter for its upkeep. We have also selected a building site at Rutgers College, fronting George street, right back of the Engineering and Chemistry Building. I further want to say that the work is far from being done and I intend to take this question up later and try to have committees appointed to continue the work and erection of building, and also a finance committee to collect material and money from the different Clay Manufacturers and Clay Miners in the State of New Jersey so that we can get a much better and larger equipped building. This is all I have to report at this time and I hope every member will do all he can to help to complete this great work, as I have said before there is a great lot of work to be done for the next year or two to come. It puts me in mind of a story when the judge read a life sentence to an Irishman. The judge said after reading same: "Pat, what have you got to say for yourself?" Pat said, "Judge, I don't think I will ever live to serve this sentence." The judge said, "Serve as much as you can." Now, gentlemen, I would like to say a few words about our labor condition at the present time.

The present labor unrest is unquestionably the outward manifestation of the inward discontent which has been instigated and fostered by the insidious emissaries of Socialism and Bolshevism. The average employer of large numbers of employees is very apt to leave the details of administration to those whom he pays well to supervise. He has in most cases worked for many years and now appreciates the fact that he can afford to relax the personal effort and enjoy life—this is somewhat of a mistake at this most critical period of our history. We are sadly in need of leaders of the right kind, men who are strictly American and who uphold our national honor in word and act—these men can exert the most powerful influence to combat the dangerous doctrines which are in vogue at the present time.

We have prided ourselves on the fact that this great nation of ours could be a haven to all the world. We welcome all aliens who are willing to work and obey our laws and become good citizens, but we have no place for the man or woman, who discontented in his or her own land, carries doctrines of dissatisfaction over here and then infects our laboring class with distrust and disloyalty. We, as employers, who come into intimate association with the workers, have a great problem before us—we realize that we are passing through a reconstruction period—it could not be different after a world war—but the time has come now to settle down as far as possible, to do a day's work with the same zest we did it before the war and with a just and fair scale of wages—reasonable hours and the good living conditions which prevail in most of our industries, our great laboring class should be happy, healthy and prosperous.

The Most Dangerous Plague.

We have heard a great deal about the "great white plague," consumption, we have given millions to stamp it out and will still give more, we have practically stamped out small pox and as soon as a great epidemic menaces our nation we rise up, we work and pay and give to stop it. Now, gentlemen, a greater plague than any of these faces us today, it creeps in while we sleep, it undermines our industrial life and endangers even our national government. I refer to the plague of red propaganda—with its many names, Socialism, Bolshevism, or whatever it may be. What we want is Americanism. Sane minds everywhere are concentrating on a cure for the conditions of unrest and instability that have thrown one nation and in fact the whole world into confusion.

There is the great remedy and the only remedy which common sense can devise and that is perfect co-operation between the three great factors, the employe, the employer and the public who are the real sufferers from all forms of industrial discontent. The great labor conflicts of the past have been mainly duels between labor and capital in which the great mass of the people had no personal interest. In fact, wherever labor had a just grievance the public was its generous partisan and was recognized as a decisive factor. Under the more radical modern leadership, labor is attacking basic industries and public utilities—as in the steel strike, the coal strike, the railway strike, the harbor strike. Of their interest in such conflicts the intermediate public has become keenly aware. They feel a sense of personal wrong which is just and deep. When Governor Allen asked Mr. Gompers his famous question, in public, Mr. Gompers evaded the question.

The answer is simple and plain. In any basic industry when labor and capital are at strike, it is not a duel but a nation-wide war in which the public has the predominant interest. As long as organized labor has the right to strike, the public has that self same law, the right to organize and break that strike.

Now it seems to have come to this issue that while we hear a great deal about organized labor, why can we not have more organized public and more organized co-operation on the part of employers to protect the rights of the public and preserve our industrial life. Drastic measures, if necessary, are justifiable when we find the rights and liberties of people assailed. The labor agitator of Socialistic or Bolshevistic propaganda must be rooted out and deported as a dangerous person to be at large.

In a country where we offer the best schools, we must see that in these schools are taught plenty of pure American ideals and a sane respect for the laws which govern our country. In no country of the world are the working classes treated as they are here, every man has his chance to rise, a striking example of which being the heads of many of our great railroads were men in the ranks of labor. While the cost of living is high it is so because we must all pay the cost of the war, the man who wears the cloth in his suit and the man who makes it, the wages in most cases are equally high, especially so among the laboring classes, not so in the ranks of brain workers it is sad to relate.

Hence the great need of the moment is sane investigation, we should arbitrate, if necessary, but always co-operate and with mutual respect for the ideals of our constitution under which we live.

The past six months have been very eventful ones in the history of the Association. As a result of the individual and collective efforts of the members of the Association, the 144th Legislature of the State of New Jersey has passed a bill establishing a New Jersey Ceramic Research Station and appropriated the sum of $100,000 for the erection of a suitable building for the housing thereof and at the same time making provision for the future maintenance of the Ceramic Department. The bill passed the Senate and Assembly without a single dissenting vote and was promptly signed by Governor Edwards. Although some difficulties were encountered in the Appropriation Committee, over the question of the title of the land upon which the building is to be erected, the matter has been agreeably adjusted and plans are now under way for the construction of the building.

During the past few years the demand for technically-trained ceramic engineers has greatly exceeded the supply and it is hoped that our manufacturers will encourage men of their acquaintance to enter the State Ceramic School in order to equip themselves for taking over the technical work in the ceramic plants of the State. With this in view several of the members have already enrolled young men in the Ceramic School at New Brunswick and I trust that others will follow their example before the beginning of another school year.

It has been proposed that manufacturers of the State contribute ceramic materials or the equivalent in money toward the erection of the new Research Station. An all-ceramic material building will, of course, be erected from ceramic products manufactured in the State of New Jersey. The building will be a monument to the ceramic industries of the State and it is fitting that our manufacturers should do everything in their power to make it a suitable one. I hope that some definite plan with this in view will be adopted at this meeting.

In conclusion I trust that the Association will pass suitable resolutions at this meeting acknowledging the splendid support given us by Senator Thomas Brown in securing the passage of the Ceramic Research Station Bill. (Loud Applause.)

SOME RECENT ACCOMPLISHMENTS IN CERAMIC DRYING.

By D. H. Applegate, Jr.

When we speak of drying, we first think of evaporation induced by moving air and usually also by increased temperature. If we give more attention to the subject, we will next consider the humidity or relative moisture content of the atmosphere surrounding the drying object. These three elements comprise all the factors which enter into any drying process carried on at atmospheric pressure. Nature's best drying conditions, namely, a warm day, a good breeze, and a dry atmosphere, are not always the best conditions for the drying of clay products, which fact is clearly established by the necessity for protecting drying ware from drafts and maintaining the humid atmosphere surrounding it, either by conditioning the room or by the application of damp coverings. The reason for this is that in drying clay we run into certain characteristics which are not generally encountered in other substances; namely, shrinkage, and varying cohesion or tensile strength. We have also to consider in this respect the porosity or the variation in the size of the pore spaces in the ware. Upon this latter factor depends the rapidity with which moisture may be removed from the body, as it is clearly evident that in a fine grained close body the resistance to the movement of water or water vapor will be much greater than in a porous open body. It is in drying the fine grained dense bodies that the greatest difficulties are encountered. If the body has considerable thickness, or if the different parts be of varying thickness the difficulties are greatly increased because in order to dry it successfully without strains or ruptures, all parts, both the inside and out, thick and thin, must be dried at an even rate and all brought to their final shrinkage at approximately the same time.

Fortunately, there is one more phenomenon connected with drying which greatly assists us in solving this problem—and that is the increasing tendency of water to form vapor under the influence of a rising temperature. We know, of course, that when the atmosphere is already carrying as much moisture as it can at any given temperature, it will not take up any further moisture at that temperature, and consequently will not induce evaporation from moist objects within it. The ability of the atmosphere to carry away moisture varies conversely as its moisture content, so that in a nearly saturated atmosphere the rate of evaporation of the moist objects will be slow. We are thus enabled, by maintaining a warm moist atmosphere surrounding the drying clay body, to cause the body to be warmed through without evaporating from the surface more moisture than will be provided by the evolution of water vapor within the body. In this way the body may be made to dry evenly from inside to out and the thick and thin parts be kept at approximately the same moisture content. In fact, the tendency is, under these circumstances, for the center of the body to dry slightly ahead of the outside because the moisture is traveling from the center and must pass through the outside in order to escape.

In this method of drying, a high vapor pressure is maintained at the surface of the body thereby restricting the escape of water vapor from it. An approximately uniform vapor pressure is thus maintained throughout the body, insuring even drying.

To maintain an even condition throughout the dryer and keep all pieces and all parts of the ware uniform, it is necessary for the atmosphere of the dryer to be under accurate and positive control as to temperature, humidity, and circulation. This is accomplished in the PROCTOR Dryer by means of internally located fans, which recirculate the air over the heating coils and the ware, and automatic instruments for controlling temperature and humidity, which latter is often increased by the introduction of moisture in the form of steam or water vapor within the dryer.

There are several types of PROCTOR Dryers in use in the clay products field, the choice of type being determined by the kind of ware which is to be dried, and by the manner in which it can be most efficiently handled. These dryers range in size from small tray dryers suitable for laboratory or similar work, to dryers capable of handling many thousands of brick or hundreds of tons of clay products per day. Of the larger types there are both tunnel truck dryers and automatic conveying dryers. The former are generally used for heavy and bulky materials, while the latter find their chief application in the handling of light quick drying ware. There are two types of tunnnel truck dryers—one designed to take care of ware which is placed on deck cars, and the other is for ware placed upon rack and pallet type of cars. In the former, the air circulation is vertical and the latter horizontal. These may be better understood by referring to the slides.

The rack and pallet or side fan type of dryer is being used successfully for the drying of silica and magnesite brick, large fire clay tiles, etc., and is just being brought into use for the semi-drying of soft moulded fire brick to put them in the proper condition for repressing. Brick to be properly dried for this purpose must be of uniform consistency throughout and must come from the dryer with the same moisture content at all times. This process does away with the use of the hot floor and the various other devices which have been tried for this purpose, and is the means of saving considerable labor, besides improving the quality of the brick and keeping the size more uniform.

This same type of dryer is also used for electric porcelain insulators, about the drying of which much has been said and written in the last two or three years since the very successful installation of the Proctor Dryer for this purpose in the porcelain insulator plant of the General Electric Company, Schenectady, New York.

The vitreous electric insulator is one of the most difficult clay wares to dry successfully, because of its comparatively low tensile strength and its very close grained body. Large insulators moulded from the plastic state and having a wide variation in thickness of the parts present unusual drying difficulties. Long periods of time and great care have heretofore been necessary to prevent cracking or dunting in drying. Covering with damp cloths was the common practice. Now this class of ware can be dried in from 30 to 60 hours without damage.

A further development along this same line is the drying of vitreous sanitary ware which is made of a body not unlike that of electric porcelain and which presents equal difficulties in drying. Many of the types of sanitary ware are composed of many separate pieces which are moulded or cast and then stuck together with slip after having dried more or less in the mould. There is also a considerable variation in the moisture content of the different parts of the sanitary piece, due to the way in which it is made. There is a variation of from ¼ to 1½ inches in the thickness of the various parts and many of the partition walls, etc., are almost completely sealed up within the piece itself so that the circulating atmosphere has almost no opportunity to reach them. It can readily be seen that rapid surface drying will be practically certain to ruin one of these complicated pieces, and to accomplish their complete and safe drying in from 24 to 36 hours we feel is quite a step in advance in this line of work.

The dryer with the vertical air circulation is generally used for repressed or stiff moulded bricks, hollow tiles, conduits, etc., for all of which it has been highly successful. We are now adapting it to the drying of glass pots and are at the present time installing a dryer for this purpose. The artificial drying of glass pots has so far been done only in an experimental way, but has been fully demonstrated to be entirely possible and a safe commercial project. These big pieces of ware often weigh as much as 3,000 pounds in the wet state and require the utmost care in drying. A glass pot of large size generally has an oval base with straight sides rising about 3 feet, after which they are drawn in to form an arch or dome over the top. At one end is formed an opening with a projecting hood through which the glass is charged and withdrawn. The base of the pots average about 60 inches in length by 48 inches in width and the height is about 52 inches from base to dome, outside measurement. The walls vary from 6 inches in thickness at the bottom to 2½ inches in thickness at the center of the dome. The difficulty of drying these pots may be readily appreciated.

The automatic conveying dryer has the advantage over the tunnel truck type in that no labor is required for moving trucks, and that no space is occupied by tracks or empty trucks. The conveyors in this type of dryer may be of either the horizontal or vertical travel type with a varying number of returns in the conveyor, depending upon the size of the machine and the capacity desired. The most popular application of this dryer at the present time is in the drying of table ware. In this case the mould and dish are placed upon a shelf in the dryer by the jiggerman or his helper and are delivered, generally at the opposite end, to the finisher, who takes the dish from the mould and returns the latter to the shelf, whence it is returned to the jiggerman for refilling. This type of dryer is also used for spark plug blanks either for completely drying or for semi-drying preparatory to turning. It is used for saggers, flower pots, etc., as well as for the drying and semi-drying of filter press cakes. These are placed in shallow baskets or trays which are arranged to dump automatically at the delivery point. (Applause.)

President Hansen and C. A. Bloomfield had to leave on an early train, so the former called C. A. Maddock, Jr., to the chair to preside during the remainder of the session, which closed with a unanimous vote of thanks to those who had participated in the day's program.

THOSE IN ATTENDANCE.

Abel Hansen, Fords Porcelain Works, Perth Amboy, N. J.
Andrew Foltz, Lambertville Pottery Co., Lambertville, N. J.
John Faherty, Lambertville Pottery Co., Lambertville, N. J.
G. H. Brown, Dept. Ceramics, Rutgers College, New Brunswick
W. L. Howat, Atlantic Terra Cotta Co., Perth Amboy, N. J.
R. V. Morton, Trenton, N. J.
Chas. T. H. Phillips, Sneyd Enameled Brick Co., Trenton, N. J.
George A. Williams, Tottenville, S. I., N. Y.
Charles F. Geiger, Niagara Falls, N. Y. (Carborundum Company).
Hugo A. Dahlquist, Norton Company, Worcester, Mass.
Charles J. Hudson, Norton Company, Worcester, Mass.
Herbert W. Moore, Atlantic Terra Cotta Co., Perth Amboy, N. J.
H. Schmidt, Roessler & Hasslacher Chemical Co., New York City.
L. S. Dunham, Thomas A. Edison, Inc., Bloomfield, N. J.
Leslie Brown, Lenox, Inc., Trenton, N. J.
Chas. H. Breunow, South Bound Brook, N. J.
John V. Brockway, Johns-Manville Co., Manville, N. J.
Edward A. Toohey, Johns-Manville Co., Manville, N. J.
Charles A. Bloomfield, The Bloomfield Clay Co., Metuchen, N. J.
R. J. S. Barlow, Roessler & Hasslacher Chem. Co., New York City.
Charles W. Crane, Crossman Co., South Amboy, N. J.
Edward C. Stover, Ass't. Gen. Mgr., Trenton Potteries Co., Trenton.
A. S. Hall, Thwing Instrument Co., Philadelphia, Pa.
Francis Burroughs, Star Porcelain Co., Trenton, N. J.
Joseph Boughey, Hanovia Chemical Co., Newark, N. J.
John M. Kreger, Monument Pottery, Trenton, N. J.
Eugene A. Hults, Ceramic Equipment Co., Trenton, N. J.
Jos. Buckley, Ceramic Equipment Co., Trenton, N. J.
D. H. Applegate, Jr., Proctor & Schwartz, Inc., Philadelphia, Pa.
E. C. Hill, Conkling-Armstrong Terra Cotta Co., Philadelphia, Pa.
F. W. Dinsmore, Imperial Porcelain Works, Trenton, N. J.
H. A. Brown, Lenox, Inc., Trenton, N. J.
W. H. Rue, Philadelphia, Pa.
C. J. Kirk, New Castle, Pa.
H. J. Knollman, Abrasive Company, Philadelphia, Pa.
L. L. Byers, Abrasive Company, Philadelphia, Pa.
F. J. Wolff, Monument Pottery Co., Trenton, N. J.
E. H. Talbert, Washington, D. C.
A. V. Bleininger, Bureau of Standards, Washington, D. C.
D. Raymond Edgar, Edgar Bros. Co., Metuchen, N. J.
S. O. Conkling, Conkling-Armstrong Terra Cotta Co., Philadelphia.
Chas. Howell Cook, Cook Pottery Co., Trenton, N. J.
L. R. W. Allison, "Brick & Clay Record," Newark, N. J.
O. Otis Bowman, 2nd, Trenton Fire Clay & Porcelain Co., Trenton.
James E. McAllister, Trenton Fire Clay & Porcelain Co., Trenton.
D. F. Albery, Federal Terra Cotta Co., Woodbridge, N. J.
August Staudt, Perth Amboy Tile Wks., Perth Amboy, N. J.
Geo. E. Hoffman, Trenton Potteries Co., Trenton, N. J.
T. Harry Mason, Trenton, N. J.
T. H. Fetter, Consolidated Clay Co., Trenton, N. J.
R. Garmo, Frenchtown Porcelain Co., Frenchtown, N. J.
W. Butcher, Trenton, N. J.
Chas. Kimble, Trenton, N. J.
H. A. Plusch, Precision Grinding Wheel Co., Philadelphia, Pa.
John B. Maddock, John Maddock & Son, Trenton, N. J.
S. M. Sharkey, The Bellmark Co., Trenton, N. J.
C. S. Maddock, Jr., Thos. Maddock's Sons Co., Trenton, N. J.
Raymond M. Howe, Mellon Institute, Pittsburgh, Pa.
K. E. Ward, Bloomfield, N. J.
F. W. Gardinor, Star Porcelain Co., Trenton, N. J.
T. A. Randall, "The Clay-Worker," Indianapolis, Ind.
M. Solon, Mercer Pottery, Trenton, N. J.
Conrad Dressler, Dressler Tunnel Kilns Co., Cleveland, Ohio.
Thomas M. Low, Dressler Tunnel Kilns Co., New York City.

PHILADELPHIA BUILDING NEWS.

THE same general conditions that prevail elsewhere are disturbing building conditions here. Practically all the activity which began so auspiciously in the spring has ceased and little or nothing is done beyond satisfying current needs. Housing operations are down to a minimum and factory and business buildings are not under construction, excepting where they were begun. The city is about to spend $7,000,000 in improvements, but aside from that the sums to be expended are small. Investors show no disposition to undertake new projects and others interested are holding back, hoping for favorable changes in federal laws which will make the conditions easier for the capitalists.

The price for common brick is around $30.00, though this number may be moved up or down, as the case may be. But a figure like that is virtually prohibitive and prevents such development as may be desired. Buyers of brick are under the impression that they can obtain them for less money in the near future, though their warrant for that belief doesn't seem to be very sound. Manufacturers are operating slowly. The labor situation is discouraging and no yards in this vicinity have been able to obtain all the labor they need. They are doing as well as they can with what they have and hope for better things when the present depressing factors disappear.

A QUAKER.

THE HOOSIER BUILDING SITUATION.

How the Great Motor Car Companies Build Up the Cities of the Nation.

THERE IS MORE BUILDING in Indianapolis, 'tis said, than any city of its class in the United States. At that, the amount of building under way in the Hoosier capitol is not as great as it should be. There is not as much home building as the needs of the city require. The larger operations are keeping up the average for which credit is due the automobile industry, of which Indianapolis is one of the great centers. A notable example is that of the Cole Motor Car Company, which is doubling its already great factory, in order to meet the rapidly increasing demand for Cole cars.

The enlargement at the Cole factory encompasses the erection of a new four and one-half story building to the north of the present main factory building, together with a new east wing to the present factory, which will be practically a duplicate of the present plant. When completed, the greater Cole plant will cover more than 600,000 square feet of floor space and the additions being added will aggregate in the expenditure involved upwards of $1,000,000.

From the standpoint of the gross business involved the Cole company will show in 1920, according to the present program, a total of more than $40,000,000 as compared to $15,000,000 for 1919. In striking comparison stands the record of the company for the first year of its activity in 1908, when the gross business done did not exceed $900,000.

HOME OF THE COLE MOTOR CAR COMPANY, INDIANAPOLIS, IND.

With the marked increase in production of Cole Aero-Eight motor cars which will be assured with the extensive enlargement of the Cole Motor Car Company's factory at Indianapolis, Ind., this firm of automobile builders steps into the very front rank of the motor car industry as the producers of quality cars.

GROWTH OF COLE PLACES IT IN FRONT RANK OF MOTOR CAR INDUSTRY.

The Cole company was founded in 1908 by J. J. Cole, who still occupies the position of president and general manager. The first year of its existence the company produced between 800 and 900 cars. However, from the very beginning its achievements in the various fields of motor car activity were notable and its rise was quick.

In the twelve years which have elapsed the company has moved steadily up the ladder and in 1919 its output had been augmented to 6,500 cars a year. In 1920, with the more than doubling of the factory, the work of which is now being completed, the company anticipates an annual output in excess of 12,000 cars.

Ranking first in point of production of the class of car it produces and, with a single exception, ranking as the largest producer of eight cylinder cars in the world, the Cole has shown remarkable enterprise. It has been one of the chief factors in the industry for years, and during the last eighteen months, particularly, has given the motoring world many of its most vital and important contributions, having been one of the most important elements in the industrial fabric of Indianapolis, which rapidly is acquiring the reputation as the home of quality automobiles.

Branching out in every way in a manner that is commensurate with its physical growth, the Cole Motor Car Company is paving the way toward a healthy and continual increase in production from year to year which, if at all proportionate to its development during the last year, will soon give it rank that is second to none in its field.

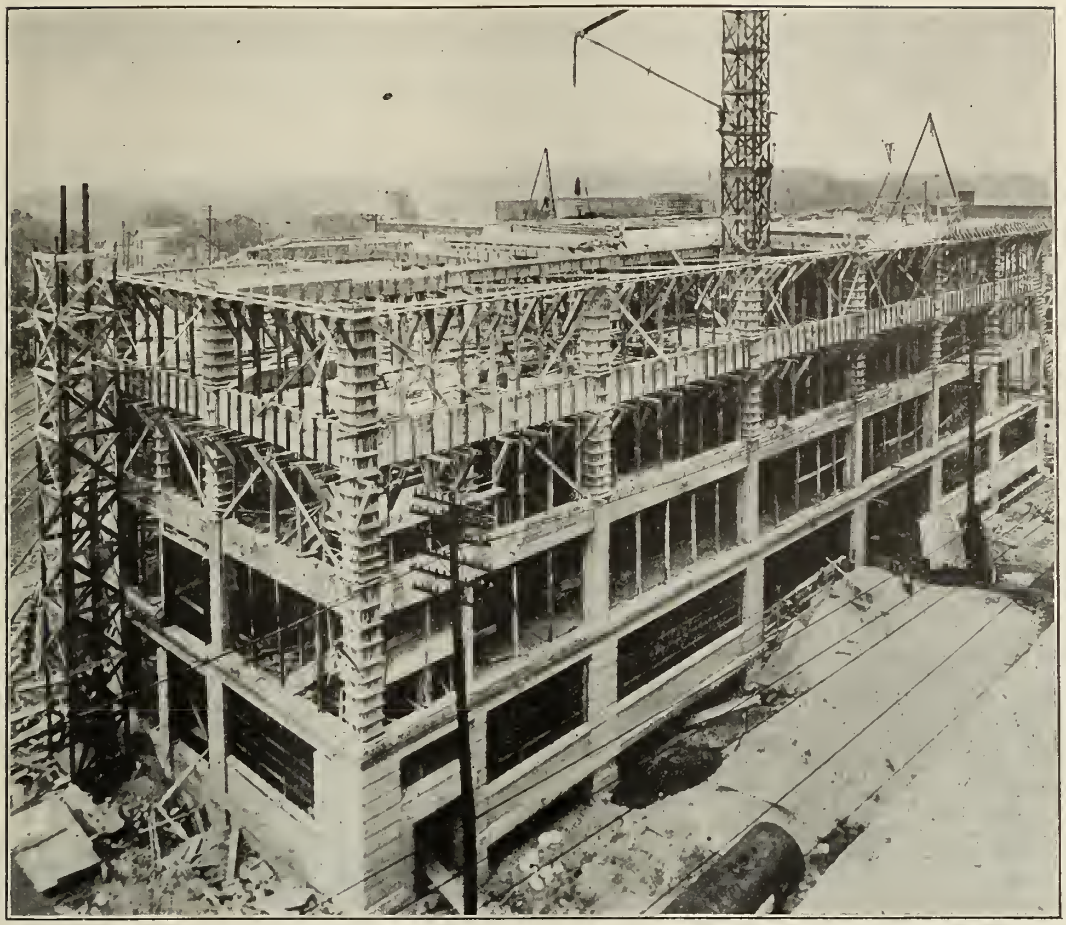
The establishment of representation throughout the world has added to its prestige, and the rapid growth of its dealer organization throughout the United States, Canada, Central and South America has given its distribution the widest scope.

Assisting Mr. Cole in the organization of the company are J. H. O'Brien, J. E. Roberts, H. R. Hyman, in charge of purchases, sales and advertising, respectively. J. F. Morrison, secretary-treasurer, and S. J. Kuqua, vice-president, have acted in their respective capacities since the inception of the company.

MIDSUMMER MEETING AMERICAN CERAMIC SOCIETY.

THE SUMMER meeting of the American Ceramic Society will be held in Chicago, August 16, 17 and 18. Tentative plans have been made and include the following:

The Hotel La Salle has been selected as headquarters and registration will take place there on Monday morning, with two trips scheduled for the afternoon. On Monday evening there will be a get-to-gether dinner at the hotel, and a short business meeting will follow. On Tuesday probably three plants in and near Chicago will be visited, and on Wednesday the party will go to North Chicago and Waukegan. In the proposed itinerary plants manufacturing terra-cotta, brick, gas mantles, enameled ware, and electrical and metallurgical materials will be visited. Mr. F. B. Ortman, of the Northwestern Terra Cotta Company, is chairman of the local committee and numerous sub-committees are working under his direction.



Section of the New Cole Factory Which When Completed Will be Faced With Brick.

Main Office Cole Motor Car Company The Entire Front Is of White Enameled Brick.

Brick and Clay Industry Makes Strong Protest Before Interstate Commission Against Advance in Freight Rates.

MESSRS. FRANCIS B. JAMES AND MICHAEL F. GALLAGHER, representing the brick and clay products industry, appeared before the Interstate Commerce Commission in Washington on July 6 and 7, and presented the protests of the industry against the proposed advance in freight rates on these products, and showed by carefully-prepared statistics that brick and clay tile are now, and have for a long time, been contributing much more than their fair proportion of revenue to the railroads.

The second day of the hearings, July 7, was given up to an exhibit by Messrs. James and Gallagher of the general effect of the freight advance as embodied in General Order No. 28, which demonstrated for the information of the commission that while the general advance for all industries was 25 per cent., an increase of 60 per cent. was placed on all brick and clay products.

Following are the statements of Messrs. James and Gallagher:

Mr. Gallagher: May it please the Commission, as the general level of freight charges increases, the problem of distributing the railroad revenue over commodities transported becomes more acute and important.

General Order No. 28 violated the principle of an equitable distribution of the revenue over commodities.

Brick and tile, which we represent, underwent an advance under General Order No. 28, an average percentage advance in the rate, as shown by the figures we have introduced in this case, of approximately 60 per cent., while the general advance was about 45 per cent.

We all know that at that time building and paving not needed for war purposes were being discouraged; but the fact remains that we have been unable to obtain any modification of that high and extraordinary advance in the rates on brick and tile. We applied to the Railroad Administration, and obtained no modification. We then applied to the Chairman of this Commission to institute a general investigation of the rates on brick and tile. You declined to do that during the period of Federal control.

We then filed a general, formal complaint, about one year ago, in which we invoked the full investigatory and remedial powers of this Commission in respect to all the rates on brick and tile in the country.

For the past year we have been preparing that case for hearing, and we are prepared with statistical data, with maps and exhibits to show you the structure of brick and tile rates as they exist today.

We are prepared by statistical verification to show you the effect of General Order No. 28.

We are prepared to show you that today in C. F. A. and Trunk Line territory this low grade commodity is paying approximately 25 per cent. in earnings higher than the average of all freight, although this Commission has repeatedly stated that from the standpoint of loading per car, from the total lack of risk in transportation, and from the minimum railroad service required, these commodities are entitled to comparatively low rates.

That case is set for hearing tomorrow morning, and the request we are to make of you in this case is, that in view of the extraordinary advance in these rates under General Order 28, in view of the relatively high level of these rates, as we have shown you by exhibits in this case, that you postpone for the time being the consideration of brick and tile, that you wait for the information and data which will be presented to you in the hearing beginning tomorrow morning, and that on that hearing and on the result of that hearing and the evidence there adduced you deal with these rates on brick and tile, and readjust them to a basis that is fair.

This industry has no desire that it shall not pay its full and fair share of needed railroad revenue. It was willing to do so at the time we sought a modification of General Order 28. It is willing to do so today; but when it presents to you a showing as to an order recently entered, advancing all rates, in which an unfair and excessive and disproportionate advance was thrown on this commodity, and when the statistics show the relatively high level of these rates compared with the average of all freight, and when we have gone to the expense and time and trouble of fully preparing a complete and exhaustive showing as to these rates for this Commission, which we are now ready to present and will begin to present tomorrow morning, we feel that it is fair and reasonable to ask of you to exclude these commodities from this case and deal with them on that general complaint.

It strikes me that these commodities stand in a unique position here. I know of no other commodities that are involved in a general complaint embracing the whole country, attacking the level of rates on the commodity, seeking for a revision of the rates on a basis that will put that commodity in a relatively fair position, where it will pay its fair share of needed railroad revenue.

We are in the position also, I believe, of having shown you here complete statistical data made by an expert of long railroad experience, indicating without doubt or uncertainty the earnings from this traffic as compared with the earnings from all freight.

In view of this situation our request is that you postpone for the time being a consideration of these commodities. We admit that it will take time to work out the problem in our case, but we believe it is not unfair to ask you to adopt that course in view of the showing we have made here as to the level of rates.

Statement of Francis B. James.

Mr. James: May it please the Commission, Mr. Gallagher has presented one phase of the problem, that your Honors should not pass in advance upon brick and hollow clay building tile until the general case is disposed of.

If your Honors should reach the conclusion that you would at the present time make an advance, and make it applicable to brick and clay tile, I want you to give consideration to the proposition which we have set forth at page 52 of our brief, as follows:

If an advance is made on brick and clay tile such advance should be made upon a percentage basis upon key or base rates with a maximum in cents per ton, and all other rates should be made in relation thereto with a preservation from the beginning of districts, groups and fixed differentials and competitive spreads and competitive parities and that where rates are made on combination where a maximum in cents per ton applies, such maximum in cents per ton should be applied but once, and fractions should be disposed of on the basis of one cent, and if any advance is made, it should be made in the same manner and in the same degree on both brick and clay tile.

In Central Freight Association territory there is a very highly developed freight rate structure. There are many industries located throughout that territory. That structure has been built up by the carriers. Districts have been made and groups have been made and fixed differentials have been made.

The same is true as to Trunk Line territory and also as to New England territory.

So you may see that throughout the Eastern territory, that is, the old Official Classification territory, there is a highly developed rate structure wherein rates are made upon base or key rates, where other rates are made in relation thereto, and where there are fixed, recognized, long-standing differentials in which rates are made in reference to key or base rates.

In Southern Classification territory the freight rate structure is not as highly developed.

The production of brick in the South is comparatively smaller than in the Eastern territory; but in the Southern territory there are recognized basis of rates, and rates made in relation to those base rates.

The same is equally true of Western territory.

What I have said as to the Eastern territory, of the inter-territorial movement as well as the intra-territorial movement, likewise applies to the inter-territorial movement from C. F. A. territory to Trunk Line territory, and from the South into the West.

It would therefore seem to be only just, for competitive reasons, in view of these districts and groups and in view of these fixed differentials, and in view of the fact that money has been invested on the faith of this rate structure, and that people have been in the business of making brick and tile for many years and have extended their plants upon the faith of it, in view of the fact that the public has been able therefore to resort to many markets of production and keep the brick producers in competition, that if this advance is made, it should be made in recognition of the existing freight rate structure, and that if the advance is made upon a percentage basis, the percentage should be applied to the base rates, to the key rates, and that the other rates should be made as they are today by fixed differentials, competitive spreads and competitive parities in reference thereto.

The next point that we suggest is that there should be a maximum applied to the base or key rates.

Much of this traffic moves upon long haul movement. Unless there is a maximum prescribed, it is going to curtail very much the long haul traffic. It is going to deprive the consumers of brick of their opportunity to resort to many points of production. It is going to prevent the producing of brick so as to meet market conditions through long haul business. It is therefore suggested that if the percentage is applied to the basic or key rates, that there should be a maximum beyond which the increase should not go.

This maximum can be readily ascertained, as we have suggested in our testimony and brief, by taking the average haul, finding the advance to the average rate, to the average haul, and make it at least approximately the basis of such maximum.

Now the suggestion has been made that these advances be made on a straight percentage, irrespective of freight rate structure, and that this should be corrected hereafter. We want to suggest that it can be done without great inconvenience to the carriers or unnecessary delay from the beginning of the application of the advance, to make the advance upon the base or key rates, with a maximum, and apply thereto the differentials which now exist as between producing groups and producing districts.

Mr. Felton, Chairman of the Committee of Western Lines, on behalf of the Western carriers in his letter to the Chairman of this Commission said:

"Well recognized and long-standing differentials and relationships should be observed, as far as possible, and it is anticipated that individual tariffs will be checked accordingly and that some of the important adjustments can be determined in the hearings before the Commission and others before the decision of the Commission is finally rendered."

We submit, that as brick and clay tile move in large volume, in well defined channels, under well recognized freight rate structures, wherein the base or key rates are fixed, and other rates made in relation thereto by fixed differentials and competitive spreads and competitive parities, there is no reason why, if this advance is made, it should not be made from the beginning, why a mere 15 per cent. advance should be made irrespective of the freight rate structure, disturbing business in the meantime, and waiting on the pleasure of the carriers at some unknown date in the future to restore those relationships and restore this freight rate structure, and in the meantime throw business into chaos, to the detriment not merely of the producers of brick, but particularly to the consumers, who may want to resort to many markets, and who by the cutting off of the rate will suffer from a lack of the competitive conditions, which situation will be brought about by making a straight advance from the beginning without regard to key or base rates, and without regard to the fixed differentials, competitive spreads and competitive parities as they exist today.

So far as brick and clay tile are concerned there are numerous precedents on the part of this Commission in previous advance cases, for the preservation of these differentials from the beginning.

These precedents are referred to and quoted in our brief, beginning at page 88, and on pages 89 and 90.

In the first Five Per Cent. case the Commission in its first opinion held that there should be no advance whatever upon brick. Upon the rehearing it held that there should be an advance, but in its order it provided for the preservation of the relationships. It provided further, in the order, at page 18, which was rendered in that case on January 4, 1918, as follows:

"On brick, clay, and articles grouped therewith in present tariffs to points in Central Freight Association territory and Illinois and on the Mississippi River, rates from Western Pennsylvania, West Virginia, Central, Southern and Eastern Ohio, and the Ashland, Kentucky, group may be established differentials under Pittsburgh."

The attention of the Commission was then called to the fact that Pittsburgh was not the key or base, but that Canton was the key or base, and thereupon the advances were applied from the beginning upon the base rates at Canton.

In the Fifteen Per Cent. case, by an order entered on March 12, 1918, the Commission did likewise, not falling into the error of specifying Pittsburgh, but correctly specifying Canton.

In General Order 28 the necessity of preserving the freight rate structure was met by providing for a specific advance of 40 cents per ton.

That order, as Mr. Gallagher has pointed out, was unjust and unfair, because it placed an undue burden upon the short haul traffic, and it is even contended, on the long haul traffic, but that order recognized the freight structure by making a specific advance of so much per ton, and Mr. Chambers in his testimony in the present case before your Honors stated that the object and purpose of making an advance of that character with a maximum, which it amounted to, was for the purpose of preserving the freight rate structure and the relationship of rates.

We have discussed the matter of maximums at page 96 of our brief.

Our next suggestion, as contained on the same page of the brief, is in reference to the disposition of fractions.

We believe fractions should be disposed of upon the basis of one cent.

This subject was fully discussed by other witnesses as to other commodities in the general case, and therefore we put no witnesses on the stand specifically as to the disposition of fractions, but adopt the arguments made by other witnesses on that subject.

Another subject that we want to call attention to grew out of ambiguities of language used in Order 28 and also in the temporary order made in Ex Parte 67 as to the Illinois-Indiana case.

General Order 28 provided for an advance of 40 cents a ton on brick, and specific advances on other commodities, and then it says, "All other commodities, 25 per cent."

Now in Central Freight Association territory, Trunk Line territory and some other territories there is what is known as the brick list, an alphabetical list of articles included in the brick list. The carriers which carried that classification in their tariffs applied the 40 cents per ton to all articles in the brick list, and not merely to brick; but in other territories, where the tariffs were differently constructed, and wherein there was no brick list, even where they carried the same rates on brick as they carried on clay tile, the carriers advanced clay tile 25 per cent. and not a specific 40 cents.

This threw things into chaos. If the Railroad Administration had been more careful in framing their order, and if the carriers had not given the most technical construction to the order, this chaos would not have arisen. So we are asking in this case that that chaos be avoided, if your Honors make an advance, so that when you speak of brick, you include articles in the brick list, so that it will include both clay, hollow building tile and brick.

The same difficulty arose in Order 67, when your Honors entered your supplementary order in that case, as you said temporarily, and applied it to certain points of origin in Illinois and Indiana. The carriers then gave the same technical construction to the word "brick," and in complying with the supplemental temporary order in Ex Parte 67 they technically applied what you said as to brick, but they failed to apply it to clay tile, although clay tile was in the brick list.

Commissioner Hall: Where they have brick lists, are they all the same?

Mr. James: Yes, they are the same. They are classified together.

Commissioner Hall: Where they have no brick list, what would be the advantage of naming articles on the brick list?

Mr. James: Because these articles ought to be kept together. They have been kept together.

Commissioner Hall: Yes, but would the naming of the brick list have that effect when there was no brick list?

Mr. James: As we have shown in our brief, some times the order reads this way: "Brick and other articles customarily classified as brick," or "brick and other burnt clay products taking the same rates as brick."

I will say there was that ambiguity, and that some carriers did it right and others took a technical advantage, and said, "brick is brick, but clay tile is not brick and not entitled to the same rate." And yet where they had a brick list, everybody recognized the fact that when you speak of brick you speak of everything in the brick list. Now we want to avoid that, and we ask that if you make an order making an advance, you make your order so specific that these errors and misapplications shall not be made, thereby avoiding the gross injustice that arose out of Order 28 and out of the temporary order in Ex Parte 67, the Illinois-Indiana case.

The Chairman: You do not mean to be understood as saying that where there are brick lists they are identical as to the commodities included therein.

Mr. James: I should say that generally. Your Honor will find in this case an exhibit offered known as rate sheet No. 7, which arose under what was known as the 1911 adjustment. Where there had been three brick lists they put them into one common brick list, including common brick, fire brick, face brick and paving brick. As I say, the great bulk of the traffic in brick moves under these well defined lists. They have existed since 1911. They have existed to the general satisfaction of everybody. Nobody has ever complained of them. There has been no complaint made, and they have adjusted themselves to the various kinds of brick that move. They work to the general satisfaction, and as I have given a great deal of study to these industries and articles, I wish to say that while there may be some difference of opinion as to this item or that item, as a whole what is known as the brick list, which you first find embodied in base sheet No. 7, is about as satisfactory solution as you can make of the classification question of these burnt clay products, and at the same time do justice, because of the difficulties at times of policing, because the brick goes so gradually from one to the other that there is difficulty in telling when it is hollow brick and when it is hollow clay building tile; and as a practical proposition, in the matter of the revenue of the carriers, and in the matter of competition, because you have your hollow building tile in sharp competition with brick, both solid and hollow, there is nothing better than the proposition laid down in the Fuller case and afterwards laid down in the Metropolitan Brick case, which has been practically followed by the Commission in the Humphrey Clay Tile case in 50 I. C. C., where you dealt with the question of hollow clay tile, in the matter of the proper grouping of the districts where these burnt clay products are produced in the state of Pennsylvania.

Commissioner Daniels: Not for this record, but merely as a matter of procedure in the hearing, your general complaint contains, does it not, a sort of general allegation that interstate rates are prejudicial in comparison with the freight rates?

Mr. James: We do make that allegation.

Commissioner Daniels: Under the Transportation Act, where there is that allegation, you have got to notify state authorities. Do you want us to notify them in all the states?

Mr. James: Probably not.

Commissioner Daniels: In what states shall we notify them?

Mr. James: When the hearing begins tomorrow, we can consider that question.

Commissioner Daniels: The Act provides that we shall notify the state authorities in advance.

Mr. James: Your Honor, I realize that counsel has discussed that question. We have discussed that matter, as to whether under this Transportation Act of 1920 there will not have to be, as to that question, a supplemental pleading filed or notice given. We realize that, your Honor. We have not overlooked it, but in the rush of matters, this case coming on, and all, it has not been determined. We have realized it and discussed it. It has been suggested that at the hearing tomorrow we might perhaps take up only interstate rates, and then let the other be supplemental.

Mr. James: We will go ahead as to some interstate rates, taking particularly the matter of the consuming market in Chicago, which is a tremendous consuming market, and where many plants are near Chicago, and where there are plants in Indiana just over the state line, where there is a political division, and yet as a matter of fact, the Indiana points as a commercial proposition, are really in the same group. It may be as to that, and as to the prejudice between state rates—

The Chairman: Pardon me, but we cannot argue that case now.

Mr. James: I understand that. I was answering Mr. Commissioner Daniels' question.

It is understood that the decision of the Commission on the protests presented by Messrs. James and Gallagher will not be made before about August 10.

ALFRED T. MARKS.

HEAT REGULATION.

From the circular matter coming to hand there is evidence that wide progress is being made in the use of devices for regulating and controlling temperature everywhere that heat is used, including a temperature range from below 300 degrees up to 3,000 degrees. There are now automatic regulators even for the hot water tank in the home. Meantime fairly good progress is being made toward a more general use of heat registering and controlling devices in clay burning. Aside from metal working there is probably not an industry where there is more imperative call for positive knowledge and control of the temperatures used. Those among the clay workers who have not installed temperature registering devices and made provisions of some kind for regulating the burning temperature have been neglecting opportunities to put their business on a positive basis for better results.

RECENT PATENTS
IN THE CLAYWORKING INDUSTRY.

[Full description and specifications of the following patents may be had by addressing **The Commissioner of Patents, Washington, D. C.,** and enclosing ten cents for each patent wanted. In ordering, give number of patent only.]

No. 1,344,880. Brick Machine. Harold H. Goe, Anaconda, Mont., Patentee.

Patent for a machine for making taper brick, with the combination of an upper die having an inclined surface to produce the taper, a lower die, a die box and yielding means in the die box constructed and arranged to effect, prior to compression, a graded distribution of the material in the die box substantially in accordance with the taper of the brick to be formed and to assume, during compression, a position which does not interfere with the formation of the brick.

No. 14,904 (Re-issue). Brick for Building and Paving. Harold S. Wheeler, Tacoma, Wash., patentee.

A building brick comprising a head having a central tongue and lateral projecting portions, the adjacent surfaces of both the tongue and the lateral projecting portions forming acute angles with the outer surface of the head and with one another, and the end surfaces of the lateral portions being inclined outward toward the tongue.

No. 1,344,099. Automatic Brickmaking Machine. David J. Strickland, Cleveland, Ohio, patentee. Patent assigned to The Strickland Co., Cleveland, Ohio.

This patent is for a brick machine having in combination with an outwardly-moving piston a charging chamber in which said piston works, a die and platen in alignment with said piston, an inverted mold adapted to be moved between the die and platen, and means for moving the mold, means for trimming the clay from the lower face of the filled mold, means for receiving the filled and trimmed mold face downward, means operable upon the mold to cause the brick to be discharged by gravity.

No. 1,344,278. Automatic Machine for Brickmaking Machine. David J. Strickland, Cleveland, Ohio, patentee. Patent assigned to The Strickland Co., Cleveland, Ohio.

Patent for a brickmaking machine having, in combination with a pug mill, die, plunger and platen, of a table upon one side of the die and a raceway upon the opposite side, a rest at the end of the raceway, a mold adapted to rest upon the table, and means for feeding the same between the die and platen and along the raceway to the rest, and combined knocking and lifting arms adapted to engage the mold upon the rest.

No. 1,344,461. Refractory Product and Method of Making Same. Charles W. Thomas, Wayne, Pa., patentee.

The process which consists in mixing unburnt raw quartzite with Portland cement, a hardener and water; molding the mixed materials; permitting the molded structure to set; and thereafter exposing the structure to a temperature sufficient to calcine the cement and sinter the refractory material.

Trade Marks and Designs Patented.

No. 132,039. Fire Brick. Pyro Products Co., Chicago, Ills.

No. 132,040. Refractory Brick. Quigley Furnace Specialties Co., Inc., New York, N. Y.

No. 130,084. Construction Materials. Bennettsville Brick Co., Florence, S. C. Use of the name "Bungalow" for brick.

No. 133,106. Construction Materials. Richard S. Requa, San Diego, Cal. Use of "UU" design for hollow tile.

BUILD WITH BRICK

HOW ARE WE GOING TO SAVE THE ROADS?

By R. E. Fulton, Vice President International Motor Co.

HIGHWAY TRANSPORTATION as a public and commercial necessity has long ago received its certificate of economic justification. It has entered into the nation's scheme of things with the same wholeheartedness that characterized the railroads in their periods of development. It has found its place and is exercising a powerful influence toward shortening the gap between producer and consumer. It has reached the point, in fact, where its extension must necessarily be restricted for the good of its own future and the future of the nation's transportation as a whole.

Legislators, highway engineers and those intimately concerned with motor vehicle expansion realize that unless some measures restricting the use of motor trucks are enacted, this country's progress toward its ultimate state of highway perfection will be long-drawn-out and tedious. Even after we have constructed a system of hard-surfaced national highways it will be necessary to provide revenues for their upkeep and maintenance. To this end it is but equitable that those vehicles which cause the greatest amount of damage to the roads should be restricted in their use at the present time, and that in the future they should contribute the largest share toward road repair costs.

At this time, when legislation to accomplish this must necessarily assume definite form, to influence motor transportation for all time to come, it is vitally important that we make a far-reaching, unbiased analysis to determine just where the basis of this restriction belongs. Not only must we save the roads, but we must do so, if possible, without sacrificing the increasing economies and conveniences that unquestionably would go with an expansion of motor transportation facilities.

There is a special field of transportation in which the motor truck is the only logical means of conveyance. How large a field it is is shown by the fact that 300,000,000 tons of material were shipped by truck in 1919. Suppose this freight were transported in one-ton trucks. It would mean that 900,000,000 tons of traffic (including weight of vehicles and cargo) would pass over the roads of this country. If transported in 7½-ton trucks the roads would have to bear only 600,000,000 tons of traffic. This is because the average one-ton truck carries two tons of vehicle weight for every ton of freight transported, while in a 7½-ton truck this ratio is reduced to less than one ton of vehicle weight for each ton of freight capacity. Regardless of what form restrictive legislation may take, the total amount of material shipped in motor trucks in 1920 will obviously be greater than the total for 1919. This country is suffering from various kinds of shortages, but they are almost all directly the result of inadequate transportation. Since no other transportation agency can now take the place of the motor truck in its own recognized sphere, it is obvious that every heavy-duty truck barred from the roads will be replaced by several smaller trucks. The result will be increased road wear and increased cost of transportation. As practically all products of the farm and factory make some part of their journey from producer to consumer in motor trucks, it is necessary to make sure there is no other alternative before framing legislation which will increase motor transportation costs.

There are many fields of short-distance light delivery, in which the lighter truck is better adapted. However, when bulk hauling is considered, the light truck's greatest asset in comparison with its big brother is its speed. For a two-ton truck to transport material as economically as a heavy-duty model it would be necessary for it to travel at three times the speed of the larger truck. Of course, the light truck cannot do this, but it does travel at a considerably higher normal speed. Its increased speed, however, produces road wear in excess of that caused by the heavy truck, in spite of the fact that the latter is accomplishing far more. It has been definitely proven that increased speed causes more rapid road wear than increased weight. It is not necessary that the heavy-duty truck resort to destructive road speeds in order to furnish economical transportation.

Tire width bears an equallly important relation to comparative road wear. A steam roller, for example, is about the heaviest vehicle which passes over a highway, yet because of its broad road-bearing surface its effect on the roadway is beneficial rather than harmful. Likewise, weight in a motor truck is destructive only when not accompanied by a sufficient width of tire. The fact is well established that a load of 800 pounds per inch of tire surface is not damaging to an ordinary roadway, and the heavy-duty truck is always built to conform to this requirement. A 7½-ton truck has one inch of tire width for each 666 pounds of weight.

Highway engineers have long been concerned with the problem of determining a fair plan for motor truck legislation. The U. S. Bureau of Public Roads, at Washington, has conducted exhaustive tests to determine the real causes of road wear. The conclusions should certainly receive careful consideration from those interested in the preservation of this country's roads. The report of this test, which appeared in the official "Public Roads" bulletin, says that road impact is the real cause of road wear. Realizing this, the experiments were devoted to ascertaining the causes of road impact. Through these tests it was decisively shown that unsprung weight is the controlling factor in road impact. Unsprung weight, by definition, is that part of a truck's total bulk which hits the road a direct solid blow, undiminished by springs. Unsprung weight does not necessarily increase in direct proportion to the size of a truck; it is controlled largely by the type of drive used. In a shaft-driven truck the entire weight of the final drive and its housing rides directly on the rear axle below the springs. In a chain-driven truck all of the driving mechanism is carried on the frame above the springs. The tests at Washington showed that a 5½-ton chain-driven truck produced only 69 per cent. of the road impact delivered by a 3-ton shaft-driven truck, although the larger truck naturally carried a heavier load.

If restrictive motor truck legislation is necessary, and it undoubtedly is, why not proceed on a basis which penalizes actual road wear, rather than one which penalizes utility, and determine by actual test and far-reaching analysis just where the blame for excessive road wear belongs? Then, and only then, will the judgment be a permanent benefit to the growth of highway transportation and its relation to public welfare.

INTERNATIONAL INDUSTRIAL CARS.

A NEW BOOKLET just out describes and illustrates profusely a new line of industrial cars for all purposes made by the International Clay Machinery Co., Dayton, Ohio. International cars embody the latest and most approved ideas and designs for all manner of cars; dump cars, platform cars, charging cars, scoop cars, hopper cars, dryer cars, in fact, cars of all sorts for industrial purposes, and the requisite equipment, such as transfer cars, turntables, switches, rails, and all accessories, with carefully tabulated tables of weights and capacities and other data that makes the book a compendium of information on transportation problems. A copy may be had for the asking. Address International Clay Machinery Co., Dayton, Ohio.—See ad on page 71.

Money is tight, but there is no panic in sight, and no danger of the country going to the bow-wows.

BRITISH POTTERY REPORT.

DURING the third week of May the British Pottery Manufacturers' Federation sanctioned advances in selling prices, to meet the recent advance in operatives' wages and the general increase in the cost of production. These take the form of additions in the "plussage" at foot of invoice, 10 per cent., in case of earthenware, and 12½ per cent., in the case of china. In the earthenware trade the "plussage" follows an original advance of 100 per cent., so that the 10 per cent. advance actually represents 20 per cent. In the china trade the "plussage" is an addition to a new basis price, so that the 12½ per cent., advance actually represents from 20 to 25 per cent. Pottery selling prices have now become very complex, but in the case of earthenware they may be simplified as follows:—Decorated earthenware, 180 per cent., above pre-war rates; white and other lower grade earthenwares, 210 per cent., above pre-war rates. In the china trade the "plussage" (including the new advance) stands at 127½ per cent; and, taking into account the revised basis price, the increase above pre-war rates will range up to 300 per cent., and even more in the case of lines which were badly cut before the war owing to German competition. A substantial improvement in exports was shown by the April returns, due largely to the fact that manufacturers were giving preference to the shipping trade—an argument which should weightily support the demand for adequate coal.

During the fourth week of May the demand for useful pottery was as strong as ever but ornamental and fancy goods were a drug on the market. Wholesalers and retailers were fully stocked with "fancies" and, in many cases refused to buy any more. As an example, a buyer offered a fairly big line at a bargain price refused to take them at any figure; and this is no isolated case. This does not imply that there was no call for high-class and really artistic decorative wares for connoisseurs and people of taste and means; the demand for such ceramics was as good as ever. But the public and the retailers are satiated with medium-class and lower-grade "fancies" especially when they were unable to obtain the table and domestic wares which they really did require.

The Whitsuntide holiday in most cases was confined to one day, and factories were soon busy again within the limits imposed by the continued coal shortage. Without more fuel it is impossible to make any real impression on the big accumulation of orders in all departments, or to meet more than the most urgent demands of consumers. Two exceptionally big and important orders, giving promise of the development of a new market, had to be refused recently by a Staffordshire firm because of the absolute impossibility of executing them with the present supply of coal.

In spite of these serious disabilities manufacturers did their best to ship as much ware as possible. A notable feature is the expansion of trade with France, which is now about six times the pre-war quantity.

During the week ending June 5th., the cost of pottery production continued on its upward trend. Following the increase in operatives' wages dating from March 25, which was covered by the recent advance in selling prices, there have been the 4s. per ton on coal and an increase in the cost of ball clay. Now there are to be further substantial advances in china clay and china stone, dating from July 1. These are the result of increases in clay miners' wages, and, added to the heavy cost of transport—sea freights are even more expensive than railway rates—make raw materials a very heavy charge on the industry.

If production costs continue to mount up in this way, a further increase in pottery selling prices is not beyond the bounds of possibility, though manufacturers are strongly averse to adding further to their already necessarily high prices. There must, in fact, be a limit to selling prices, especially in overseas markets. It is true that the demand for British goods continues practically unlimited, and Germany and Austria are likely to remain out of the running for a long time to come, but the Japanese are pushing forward in many markets of the world. They are enlarging their footing in India, and are now making headway in South Africa, which is comparatively new ground for them.

The Japanese have won a strong hold of the Australian and New Zealand markets, though latest advices to local manufacturers suggest that their progress in the Antipodes has recently received a check, due to less favorable exchange conditions and the higher figures asked for their goods. The advance in Japanese selling prices is largely due to increasing wages in Japan; but while labor cost there is undoubtedly advancing, it is at present only about one-fifth of that obtaining in Great Britain.

A LESSON FROM THE CHEMIST.

By Richard F. Bach, of the Staff of The Metropolitan Museum of Arts, New York City.

OF ALL types of activity receiving direct stimulation from the war, none has so well profited by the present isolation of America as the science of chemistry. Official reports for the year preceding last June offer satisfactory information as to the growth of the dyestuffs industry in America. Of aniline dyes, America imported in 1914 products to the value of $7,241,406, and four years later exported similar products to the amount of $7,296,080.00. There is a sermon in these figures. Four years have accomplished not only a complete neutralization of the former import figures, which may in this case be considered a negative figure on the thermometer of trade, but have in addition witnessed a positive gain above zero of an amount more than equivilent to the previous importations.

Those coal tar dyes we formerly purchased from Germany. We now make essential colors sufficient for our own requirements and have begun to sell other countries that have not so well profited by the opportunities of the war. In fact, latest reports show that our sales outside the United States are being made at a rate which would be represented by an annual figure of close to ten millions, and this does not account for the factor of acceleration.

For those interested in the industrial arts the initiative of the chemists offer pregnant suggestions. They have taken opportunity by the forelock, have assured American business in a very important field, have patriotically established America in a new branch of commerce, have assured to the American people a decided advantage in the way of American-made colors.

Can we say the same for American furniture, textiles, floor coverings and other industrial arts fields? Have they seen their opportunity or have they been careful to persuade themselves that business will be as usual after the war? Do industrial arts producers in these many fields fondly imagine that all of our friends, the Allies, will go out of business after the war? The same advantage which the chemists saw in America's isolation, our Allies have undoubtedly seen as a menace to their own commercial progress. There will be as many millions of mouths to feed in Europe, there will be as many artisans and workers capable of the highest type of tasteful execution as ever before; there will be put forth as a consequence the utmost efforts to re-establish European leadership in the industrial arts in the American market. The Allies saw three years of war before we entered the ranks; they had therefore three years' time in which to consider what to do when the war should end. As a consequence, it ended more suddenly for us than for them, and the most terrific current and cross-currents have begun to churn up the smooth course of our business life.

American manufacturers in the industrial arts fields must take advantage of their opportunity to improve their foothold in the markets of the world. American distributors must be convinced that the American public deserves the best; the American people must realize the plus quality of design in their own home furnishings. To this end the American schools must teach taste and appreciation rather than inane drawing without objective in execution. To this end we must make a beginning in training our own designers to provide for our own ends in our own way. To this end all of our manufacturers, designers, artisans, craftsmen, workmen, school children, and all who run and read, must find time to visit the museums, to take advantage of the enormous opportunities offered not only by collections themselves but in the way of lectures, study rooms, photographs, publications, expert advice, and many other lines of direct educational usefulness. We have only to consider the work done by the Metropolitan Museum in this connection to be assured of the immediate purpose which actuates our great museums. When the arts of peace will be called upon to restore balance, when these arts begin to function once more as a lodestone of life, the work of the Metropolitan Museum will be rated high.

It is the high duty of craftsmen and women in the various arts of ancient lineage and of honorable history, in their effect upon the growth of civilization, to cherish constantly the ideal of absolute perfection of design and reliability of workmanship, and this duty, like the arts themselves, has changed progressively with each decade of time. In the year 1919 it came to mean that handicraft in itself is not complete as an evidence of human progress in art.. This handicraft must also exert its direct effect as a check upon machine manufacture, improving this by excellent example and by faithful practice. Nor should the craftsman wait for the manufacturer to come to him for suggestions; the obvious duty lies in the other direction. The craftsman in lace as in metal and other fields, must convince the manufacturer, who must in all cases supply the mass requirements of the people generally, that only the best product in design and execution is good enough for America. The best workmanship, and the best design will invariably remain in control of the handicraftsman, but unless he has demonstrated to the manufacturer engaged in mass production the guiding value of his craft, as a standard, he has performed but the tithe of his mission and his finest work must remain nothing more than a voice in the wilderness.

ROAD WIDTHS.

Now that the good roads idea has found its way in public favor and good highways are being built at a rate never heard of before there is coming a strong plea for wider roads. As a result of good roads traffic has increased, especially in the thickly populated Eastern country, until merely good roads is not enough, there is need in many cases for wider roads. The call for these is a reminder that in the near future the question of road widths will be an important one in road planning. We will have a need for what might be termed single and double width roads and in many instances the problem will be to determine which shall prevail in a given undertaking.

DEPARTMENT OF AGRICULTURE ADOPTS NEW METHOD FOR TESTING PAVING BRICK.

THE UNITED STATES DEPARTMENT of Agriculture has adopted the following method for testing paving brick:

The apparatus necessary for making the test, ordinarily called the "rattler," consists of a 14-sided barrel of regular polygonal cross section supported on a suitable frame and fitted with the necessary driving mechanism. The staves, each of which forms a side of the barrel, are made of six-inch 15.5-pound structural steel channels 27 inches long. These staves are double bolted to the cast-iron heads of the barrel, which are provided with slotted flanges for holding the bolts. Cast-iron wear plates are bolted to the inside of the barrel heads. The inside diameter of the barrel is 29 inches.

In this barrel is placed what is known as the abrasive charge. This charge consists of two sizes of cast-iron spheres having respective diameters of 3¾ inches and 1⅞ inches, and weighing, respectively, 7.5 pounds and 0.95 pounds when new. Ten of the larger spheres are used, and the number of the smaller spheres is made such that the weight of the entire charge will approximate 300 pounds. The individual larger spheres are discarded whenever their weight falls to 7 pounds or less and the smaller spheres when they become sufficiently worn by passage through a circular opening having a diameter of 1¾ inches.

The test is made by placing a charge of 10 dry brick in the barrel, together with the abrasive charge, and then revolving the barrel 1,800 times. The number of revolutions per minute is not permitted to fall below 29½ nor to exceed 30½, and the operation is made continuous from start to finish.

The results of the test are reckoned in terms of the loss of weight sustained by the brick, and this loss is expressed as a percentage of the original weight of the brick tested. In determining the loss in weight no piece of brick which weighs less than one pound is considered as having withstood the test.

According to department tests good paving brick will ordinarily lose from 18 to 24 per cent. of their original weight in the "rattler" test, and specifications concerning this loss should be prepared with a view to the character of the traffic for which the pavement is designed. It is also advisable, says the department, to require a minimum as well as a maximum percentage of loss which any specified sample of the brick may sustain. This is done in order to insure against too much variation between the softest acceptable brick and the hardest brick which may be supplied. ALFRED T. MARKS.

15,000 BRICK SHIPPED BY PARCEL POST.

Editor The Clay-Worker:—

In reply to your query relative to the shipment of brick by parcel post, will say we sold 15,000 face brick for two buildings at Vernal, Utah, all of which were shipped by parcel post. Each brick was wrapped in paper and then packed in crates of ten brick each, the crates being made of light strips of wood. The total shipment went forward in approximately 1,500 separate packages, costing 55c postage for each package of ten brick. We were allowed to ship only a certain amount each day to avoid congestion of the mail at the Vernal end of the line. All mail and parcel post goes on the D. & R. G. trains to a point within 70 miles of Vernal, from which as parcel post it is hauled by auto trucks. The brick cost delivered at Vernal about $90.00 per thousand.

Yours very truly,
Salt Lake Pressed Brick Co.,
By John B. Cahoon.

Salt Lake City, Utah., July 19, 1920.

FUEL ECONOMY IN COAL BUYING.

Factors That Make for Economy in Coal Buying That Are Worthy of Study So That Clayworkers May Get More Out of Their Dollar Invested in Fuel and Power Producing.

IN SEEKING for fuel economy there are two broad paths for the clayworker to follow. One is that of furnace equipment and ways and means for utilizing to the best advantage the fuel obtained. The other is in the selection of fuel for quality, and to fit the particular needs of the clay working industry. There is urgent call for clayworkers to make a careful study of both these two. Next to the metal industry and the railroad the clayworking industry is the largest consumer of coal in the country. The total annual production of coal runs now nearly 700,000,000 tons, and somewhere between 10 and 15 million tons of this is used in the clayworking industry for power purposes and burning wares, the greater proportion being used for burning wares.

The present offering is a discourse on the subject of coal and its purchases with a view to economy in fuel cost, that is, where and how to select to get the most for the money, when burning coal as such directly in the furnace or in kilns. The matter of reducing coal to gas for burning purposes is a separate item and the present discourse is based on the assumption that coal is to be burned directly in kilns and boiler furnaces.

Some interesting light on this subject under the heading of "Purchase of Coal on Quality Basis," was furnished by John C White, state power plant engineer of Wisconsin, with headquarters at Madison, in a leading article in the National Engineer. Mr. White is chairman of the educational committee of the National Association of Stationary Engineers and is in position to speak authoritatively on the subject.

The first point he makes is a lack of standard classifications for coal which will make proper guides in purchasing. He points out that lumber is classified as to grades as well as specified as to dimensions, and that most of the other products of the mines, forests and fields have established grade values so that an order calling for any of them will secure essentially the same value in any locality in the country at any time. This he points out is not true of coal. It is not classified into standard grades as to quality, and has only some natural classifications, and as to the degree of preparation or rather its manner of separation after it is taken from the mines.

The natural classifications of coal are, anthracite or hard coal, bituminous or soft coal, lignite or brown coal, peat or coal in the early period of formation. These have some distinct characteristic and give some general idea of fuel values, but nothing definite enough to satisfy the exacting commercial needs of the day especially in the present era of high cost.

Grades and Classification of Coal.

Mr. White gives the classifications commercially as to the degree of preparation and sizes upon leaving the mine as follows.

"Run of Mine: Coal that is loaded on cars as it comes from the mine without preparation of any sort.

"Lump: Coal that has the finer pieces and dust screened out.

"Screenings: Coal passing through any designed size of screen.

"Egg, Nut and Pea: Coal passing through and over various sized screens. The different sizes below egg are generally indicated by numbers as 1, 2, 3, or 4, but screens have not yet been standardized and there is nothing to insure that a screened coal from one mine will be the same size as a coal of the same number from another mine.

"Number 5 or Slack: Finer than No. 4, and containing all the dust.

"There are numerous other local and industrial classifications not necessary to include here. The screened coals are further classified as raw or washed depending on the necessity for washing and particular coal and whether or not the producing mine is equipped to do the washing."

Size has little effect on heat realization from coal in burning it in the brick kiln. It may make some difference, mainly due to mechanical causes, that is, certain sizes are found to work better in firing. Some of the clayworkers find for example that the nut coal size works better than other sizes, giving a smooth fire with less fuel waste and greater ease of control than any other. Probably it depends some on the equipment and training of those doing the firing. A little experimenting here to determine how the best results may be obtained from various sizes should prove of value to any clayworker and repay the time and trouble required to make the experiment. All this however is a matter of minor detail in developing efficiency in the furnace work itself. The real meat of the matter that we have never gotten into properly is the value in the different coal offerings themselves. So far the main established unit of value in coal is what is known as the British Thermal unit, designated by the initial B. T. U. To the average coal consumer that does not mean much but is a thing to juggle with and talk about. In the final analysis however something of this kind will have to be the basis of test for determining the comparative fuel values of different coals offered.

The thing that makes the difference in coal is the relative quantity of moisture, volatile matter, carbon, sulphur and ash, and these vary widely. Also some of them which do not make a great deal of difference in power production may cut quite a figure in burning clay products because of the color element involved and the effect some coals may have in this matter.

Coal Like Clay Varies in Quality.

Now then, here is the nub of the matter; a man may be buying bituminous nut coal to fire his kiln and, by experiments may find a coal from a given mine that seems to work and give satisfaction. He may get other coal from the same general field that though seemingly the same will behave quite differently. Moreover we may get coal from the same mine that varies widely. The variation here however is not likely to be so great as coal from the different mines. The trouble with it is, the average user has no means for determining in advance the quality of the coal because its appearance is no indication whatever of its heating quality. It is not like lumber. A man can buy No. 1 common, 2x4, pine, and it does not matter what mill or what section of the country it comes from, both the dimension and quality are standardized. In coal it is different, the size may be standardized, but the quality has not been standardized nor will the appearance of the coal furnish any guide to its quality.

The basis for understanding on this as suggested by Mr. White is for the consumers and especially the larger ones to keep insisting that coal be standardized as to values and tested and mine operators persuaded to maintain tests and standards so that they can give not only the B. T. U. of the coal shipped, but can furnish a general analysis showing approximately the relative amount of the different elements in the coal.

He points out that what we know as practical experience is of but little value in determining the quality of coal, and cites instances where firemen were using a high grade of coal, practically smokeless and not getting from it any better results than could be obtained with a coal costing much less money.

He points out that the buyer of coal who bases his purchases on nothing but the experience of employes using it violates the first principle of good buying, that of securing the greatest value for the amount paid. In buying almost any other raw material the purchaser will insist upon a standard of quality, and will generally have some clear basis for determining exactly the quality of the product bought.

Determining Fuel Values.

It is pointed out that the object of selection in buying coal is to secure a fuel that will work well in the type of furnace one is operating and that will evaporate the most water at the least total cost. With this in mind, evaporate tests have been suggested as means of determining fuel values. This is good as far as it goes, but it does not go far enough even in power production. When it comes to burning clay products there enters of course some other factors which need to be studied for a better understanding of what elements in coal may affect favorably or adversely the product. This is a job for the clayworkers themselves to determine, so that they may have definite knowledge to start with and may go to their coal men with an intelligent proposition. This eventually may call for a copy of standard analysis of the coal from the different mines, and one feels like venturing the prediction here now that before many years roll around the better operators of coal mines will send out with their selling literature analysis of the average product taken from the mine which will furnish some useful information to the coal consumers. In winding up his somewhat exhaustive discourse on this subject in the National Engineer Mr. White says:

"If the coal producers like other industries were required to give definite values and to test their coal daily and mark the quality of each shipment on the bill for same all purchasers would be protected and large consumers could still verify the mine tests by occasional tests at destination. This would add only one or two cents per ton to the cost of production, would remove all necessity for B. T. U. contracts and the statements of the producer as to quality would be his guarantee therefor. However, until some such method is worked out and adopted the purchaser must protect himself by such means as he can."

AN UNIQUE METHOD OF UNLOADING BRICK.

WHERE time—and cost, too—can be saved in the handling of any commodity by the supply man, the effort is worthy of adoption. For time is money in these operations, and speed is another factor that has to be taken into consideration. When a supply dealer is busy he wants all the time and labor-saving that is possible. Competition urges him to adopt newer and more effective methods of handling his lines and he realizes that the element of competition is such as to make his present and future success only possible with the installation of any device that will assist in bringing this into actual existence.

Handling building brick, for instance, is one matter that has to be looked upon as a vital part of the operation of a supply depot. It is true that not every dealer manufactures brick, and some who do are not so situated that the same can be shipped via the river route. If the plant is located on the river and the point of unloading can be on the same stream, he has some decided advantages, but then his troubles are not at an end. The cost of shipping the brick from the plant to the market is but one part of the operation. After they have reached their destination—that is the place where they must be unloaded from the barge to the wagons or motor trucks—there are other problems to face, and these are often more difficult than loading them from the plant to the barge.

Solving the difficulties have been most effectively accomplished by the plan put into operation a few months ago by the Cincinnati Clay Products and Supply Co., at Cincinnati. The brick plant is located at New Richmond, Ohio, about eighteen miles down the Ohio river, and the company maintains two large river barges for the delivery of the brick to Cincinnati, where they are loaded into motor trucks and taken to the designated job. The company has hired a tow boat to deliver the brick to its wharf at the foot of Race street, and each barge is capable of containing 140,000 and 200,000 building brick, respectively. The tow boat brings down a barge of brick in the afternoon and by the following morning the latter has been emptied and the boat is ready to leave for the plant with the empty barge, where it can at once start on its return trip with the other loaded barge. This makes it possible to keep the wharf continually supplied with brick.

This part of the operation, however, is not a very late plan, as it was in operation before the adoption of the unloading scheme now so effectively saving time and labor hire. In the old days, when the company used horse teams, the latter would drive directly on the wharf, where a wagon would be loaded by hand with the aid of five or six men, who often had to walk some distance to the wagon, depending, of course, upon the number of brick left on the barge as the wagons were loaded. However, it required on an average of twenty minutes to load a team with the aid of five or six men, each wagon only having a capacity of 1,000 brick. On active days about 40,000 brick would be loaded from the barge to the wagon in a day.

This was a time-wasting effort, and it demanded the services of about half a dozen men, too. There was a motor at the top of the hill and a cable pulled two loaded wagons to the street level with the power produced by the motor. But the matter of delivery was slow and the operation was not satisfactory, as each wagon would not carry more than a thousand brick. The use of motor trucks on the wharf could not be adopted. The weight of the trucks, alone several tons, and the added weight of two thousand brick, was too heavy to allow loading them on the wharf. So a new plan was put into operation.

The new plan is a simple and still a very effective one. There was an engine purchased and placed on the wharf, and a boom attached to this, that was long enough to permit the brick to be unloaded from the barge to the waiting truck, at the water's edge. There are a number of wooden conveyors, capable of holding five hundred brick each, and a number of these are loaded and kept ready for the trucks, so that when one of the latter arrives, there can be 2,000 brick dumped into the truck in six minutes' time. Then there are now but two or three men required, mostly only two, and the work is only the matter of a very few minutes until the truck is ready for moving. The uphill pull is a big one, and in order to facilitate this, the same cable that was formerly used for pulling the horse teams to the top of the hill, is now used to pull the trucks up to the street. But the power is obtained now from the one engine, another saving in the operation.

So now 2,000 brick can be loaded into a motor truck in six minutes' time, and there is but one-half the number of men required for the work. It is possible to unload from 50,000 to 60,000 brick per day with this system, and this has been done. The brick are not delivered to the yards but are taken directly to any job, the deliveries being made within a radius of nine miles of the wharf. It has been estimated that there has been a wonderful saving in time with the adoption of the power plant. If a truck had to be loaded here by hand, it would demand a larger number of men and the cost would also be much greater on account of the extra time demanded to load the truck. And this means a big increased overhead, too, and that is dollars made or lost for the company, in this case a decided saving in profits.

CORRESPONDENCE.

THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

South Carolina Man Wants Brickmaking Machinery.

Publishers The Clay-Worker:

Please favor me with a sample copy of your publication.

I would also be glad if you would request for me catalogs from several of your advertisers of machinery and equipment required in a medium sized common brickmaking plant.

Thanking you, I am,

Yours very truly,
E. R. BLANTON,
Greenville, S. C. P. O. Box 773.

A Convention Echo.

My Dear Randall:

Since we learned of the nomination of Governor Cox for President on the Democratic ticket both my wife and myself are very happy to have had the opportunity of meeting the governor and listening to his splendid speech at our N. B. M. A. banquet in February. For that pleasure we are grateful to you for having secured him as one of the speakers of the evening.

I think all four men nominated on both tickets are fine, straightforward and good up-to-date men. While I personally would like to see a change of administration from one party to the other, as I think frequent changes are beneficial to the country, I feel quite sure that if Governor Cox is elected, he will give the country a square deal.

I am planning to leave home with my family, July 15, for Mount Clemens, Mich., where I will spend a few weeks and I hope to get rid of rheumatic tendencies that have been bothering me of late. May I hope to see you up there?

With very best wishes for yourself and family, I am,

Very truly yours,
F. SALMEN.
Slidell, La.

The Voice of a Buckeye.

My Dear Randall:

Rah! Rah!! Rah!!! Harding!!!! I am out of the brick business so far as active work is concerned, but I am interested as an innocent spectator. From my position on the fence, the trials and tribulations of the brickmakers of the country during the past three years would, had I continued in it, have driven me to drink—if we had not taken the water cure. Neither am I in politics actively, but I am delighted with the selection of Harding, and you can enter my prediction that he will carry Ohio by an old time Republican majority and sweep the country, so to speak, just as McKinley did.

I cannot be with you at Asbury Park, nor Trenton, but I hope, in fact, I know that you and Professor Bleininger and the other old "mud horses" who do get there will have a good time, a profitable convention, with plenty of wise advisers to plan for the next N. B. M. A. convention. If it is held in February I will be fishing at St. Petersburg, Fla., where I go the day after we elect Harding President.

With kind regards,

Yours very truly,
CHARLES J. DECKMAN.
Cleveland, Ohio.

Information Wanted Relative to Burning Sewer Pipe With Oil.

Editor The Clay-Worker:

I enclose check for payment of my subscription for another year. We were very sorry you could not get to our Toronto convention for it was a great success. I had to miss the Columbus convention, owing to the vaccination regulations, so feel like it has been a long time since we have had a good visit. Hope if you get up in this section during the summer, you will surely give us a call. Will be more than glad to see you.

The coal situation is a very serious one with us. It is hard to get coal of any kind and almost impossible to secure high grade coal, free from sulphur, such as we require for salt glazing our sewer pipe. We have been wondering if any of the sewer pipe manufacturers were burning with oil. Would be glad to hear from any of them as to what success they have. With kind regards,

Yours very truly,
THOMAS KENNEDY.

Wants Information in Regard to Winning Clay.

Editor The Clay-Worker:

We are just completing the construction of a modern brick plant, with Dressler Tunnel dryer and kiln. We have a problem of digging our shale, which by the way is medium hard, out of a 10 to 25 ft. shale bank, loading it into 2-yard dump cars. At present our capacity will only be about 25,000 to 30,000 per day, and is not large enough to warrant the installation of a steam shovel. The writer is anxious to find out if there is on the market at the present time, a small machine that could be used for digging and loading the shale into dump cars, and operated by one or two men. We are anxious to cut the cost of this digging and handling to the lowest possible figure.

I will appreciate any information you can give me along this line.

Yours very truly,
V. J. HULTQUIST,
Supt. of Construction.
ALUMINUM COMPANY OF AMERICA.

Heard In New England.

Editor The Clay-Worker:

Brick are selling in Boston at $32.00, with not much demand. In Worcester they are about the same price. In Springfield the price is around $30.00. In Holyoke they vary from $30.00 to $32.00. In other Massachusetts cities the situation is such that prices are little more than nominal. So many of the textile centers have been more or less upset by strikes or readjustment operations that building activities have virtually ceased, excepting where they have begun and must be continued to prevent losses. New Haven, Conn., is selling at around $30.00, while Hartford is getting a little less, perhaps $28.00 to $29.00. In other Connecticut cities prices do not vary much from these figures, and when they do it is due to the local influences which are all more or less important.

The building situation through New England has not developed as was expected. A recent run through a portion of it shows that many factory structures are in process of erection, but housing problems have not been met and it would appear from what can be seen that they are not likely to be met this year. The same influences are working against the development of many necessary housing operations as are retarding them elsewhere. Prices are too high and the movement into consumption of brick and burned clay materials has declined until it is smaller than it was during the war. The government is taking no brick now and other agencies which were then active are no longer doing business. Most of the New England cities have kept their heads in the general readjustment upheavals, but they are doing very little new work. HIRAM.

PACIFIC COAST NEWS.

Editor The Clay-Worker:

The rush of business in the clay industries is being held back by the freight situation and the financial restrictions placed by the banks. The latter usually does not directly affect the clay industry or the manufacture of brick, for this is regarded as a highly essential industry, but the action of the banks in restricting credits in many industries has affected business throughout all its lines. One peculiar thing connected with the tightening up of credits, it has seemed to have caused a scare more to those of large means and ready cash than it has to the little fellows, who are going about their business about as usual. However, the feeling is general that restrictions on credit have passed their peak and that the banks will gradually get back to a normal basis again.

The brick manufacturers whose headquarters are in San Francisco state that they have more orders than they can fill, and when to this is added the difficulty of making shipments except by water the brick managements say that conditions are unprecedented. If the bulk of the orders can be retained until shipping conditions become more nearly normal the brick companies should have an exceptionally prosperous year.

In this city there is a real scarcity and several jobs are said to be held up because brick cannot be delivered to complete them. Some of the brick companies which have a water haul from their plant to the city are working all the men they can get to keep their customers supplied. But labor continues scarce and this is holding back production.

The difficulty in getting enough bricks to satisfy the demand has turned the thoughts of many builders to other material. Reinforced concrete, even for smaller buildings constantly shows a growth in favor, and in the South adobe is constantly being pushed for building material.

At the Smith, Crenshaw & Bolton adobe works in Long Beach, 1,000 adobe bricks a day are being manufactured. These bricks are manufactured by taking in adobe in a steady stream and turns out the completed brick.

Probably the most enthusiastic adobe man in Long Beach is Newton Todd, an attorney, whose house is built of this material and has just reached completion. The house is 36x46, has six rooms and is stucco finished. The cost is $7,000. Mr. Todd says that the cost of his adobe house is less than if built of brick or tile, but what appeals to him most is its permanancy.

It is just this condition of permanency that is detracting from the popularity of the adobe house. The old adobe house is valueless for wrecking purposes and it is therefore likely to stand on a lot long after its first usefulness is past and thus hold back the improvements in that part of a city where it is used. Some architects, however, take the stand that much beauty can be put into an abode house and that it can be made truly ornamental. The question is being very vigorously discussed pro and con in the southern part of the state and out of the discussion will doubtless come either the resurrection or the abandonment of adobe in homes.

The Livermore Fire Brick Works at Livermore has been making additions in the way of new machinery and the plant is now in condition to turn out a greatly increased output.

The Western Potteries Company is making rapid progress in rebuilding its plant which was burned at Richmond in May with a loss of $100,000. Two of the three new buildings have already been completed and it is stated that the third will be ready for occupancy in the near future. New machinery is being installed. SUNSET.

WITH OHIO CLAYWORKERS.

Editor The Clay-Worker:

The General Fireproofing Company conducted a school of salesmanship early in July. Sixty men of the company's traveling staff were present and addressed the convention. A large class of men, all employes of the company, attended the lectures and classes in which the making of steel and other materials is taught. A banquet was held at the Ohio Hotel, attended by a large delegation of the company's employes, at which Lee A. Smith, chief sales manager of the General Fireproofing Company, was toastmaster.

With a capital stock of $750,000 The Homer Knowles Pottery Company of East Liverpool, has been incorporated under Delaware laws. Shares will be sold at $10, and only common stock will be issued. Incorporators are Homer H. Knowles, now associated with the Knowles Taylor and Knowles Pottery Co. Carl P. Blackmore, of Chester, W. Va., and Los Angeles and W. H. Halliwell of Los Angeles, Cal. While some stock of the new company will be sold in Ohio, the bulk will be disposed of in California. The plant will have a capacity of five glost kilns and four bisque kilns and sufficient room will be provided for increasing the capacity to 11 kilns.

The Carey (Ohio) Porcelain Company has been incorporated with a capital of $60,000 to manufacture porcelain. The incorporators are C. Follett, J. W. Eckelberry, W. M. Briggs, W. N. Nye and Beaull.

Construction work on the new plant of the Scio China Company at Scio, O., has been delayed indefinitely on account of non delivery of materials "We can't say when we will be able to proceed under normal schedule," William T. McNutt, president, said the first of July. The company has been unable to get cement and sand, although kilns are now being erected.

Another new industry is about ready to start in New Castle, Pa. Machinery and equipment have been installed for the New Castle Refractories Co. in the buildings at one time used by the New Castle Stamping works. The New Castle concern will employ about 300 men and will make parts for the Dressler tunnel kiln.

The Brunt Tile and Porcelin Company with offices at East Liverpool, and which firm operates in Chaseland, north of Columbus, has suspended operations because of coal scarcity and materials. The switchmen's strike caused so much trouble that it has been impossible to get sufficient coal and other materials. In the meantime repairs are being made to the plant. BUCKEYE.

We are now being told that the people in this great country of ours spend for luxuries $8,710,000,000 annually. There is a lot of difference of opinion as to just what constitutes a luxury (a vacation is a luxury to some, and to others a bath), but there is undoubtedly room to cut down the item considerably by cultivating thrift habits, and there is no question but what it would help some.

THE CLAY-WORKER

Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

Title registered, contents copyrighted.

THIRTY-SEVENTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " "	10.00
Ten copies, " "	15.00

Foreign subscriptions 65 cents additional.

☞Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to

226 East Ohio St. T, A. RANDALL & CO. [Inc.], Indianapolis.

Vol. 74 July, 1920. No. 1.

CURRENT COMMENT.

The slowing down of building operations this year means just that much more of it to do next year.

* * *

The Great American Tourist will now carry back to France some of the money borrowed from this side.

* * *

That fifty-cent dollar seems to be growing a little now. Here's hoping it will soon be full size again.

* * *

To the ambitious man at work one bit of good advice is, that it is up to him to put the motion in promotion.

* * *

There is hardly a week rolls around but we see something to remind us of the need for more research work in clay products.

* * *

About the only real call for more workers to help these days comes from the farms, and that will ease down when the harvest season is over.

* * *

It's a mighty fine thing to be good natured and always smiling, but it takes some other qualities added to this to make a go of things in the clayworking industry.

* * *

Mid-summer building is a bit slow, but there is no occasion to pull the fires of the brick kilns, for there will be plenty of need for the summer's production in both brick and tile.

* * *

There is no question but that advertising helps. The question pertains to how the advertising of clay products may be done to return the most good for the money and energy put into it.

There is both money and satisfaction to be gained from making a better product than the average.

* * *

Let us make the boosting of the products of the industry a friendly game, and play hard at it in the right spirit.

* * *

Are you planning to make a fair showing of your products at your local fairs? If not you are passing up a good opportunity.

* * *

The search for substitutes for gasoline is now crowding the interest in substitutes for booze, with less excitement to its credit, but more chances for actual results.

* * *

Coal cost is putting a heavy burden on brick costs right now and it makes an addition to the price which is no more welcomed by the brick man than by the consumer.

* * *

Your local paper can help a lot in selling the clay products idea in your own community if you will do your part by advertising in it and getting the editor interested in your product.

* * *

The tractor on the farm ought to make for more drain tile work during the late summer and fall season, and it will help if the tile men will get ready and push the power ditching idea along.

* * *

About the time the railroads get into shape to handle more traffic they will find that a lot of it has gone over permanently to motor trucks, furnishing a striking example of how it costs not to be prepared.

* * *

The man who goes out and buys new machinery these days learns something about values which makes him think he has his equipment inventoried at too low a figure. And something of the same is true of new buildings and old.

* * *

We hear of a freight traffic congestion down at Havana, Cuba, and just awhile back we were being told of thirsty pilgrims going down there for a "load." Between sugar prices and booze "histers" our little Island neighbor seems to be prospering greatly.

* * *

It is right and proper that we should take a keener interest in politics to the end that we may improve the business of government. However, we need not expect to solve many of our everyday business problems through political chanels, nor should we neglect them to play the political game.

* * *

Stringency in the financial world makes a temporary handicap to building operations, but there are two good features about this for the clay working industry. One is in the opportunities to promote the use of a greater percentage of clay products in what building is done, and the other is in the fact that postponed building means busy times in the future and a better opportunity for the industry to get ready for it.

THE SPIRIT OF THE TIMES.

We see and hear a lot of reference about the spirit of the times. It is referred to as a spirit of unrest perhaps more frequently than anything else, but what probably comes nearer it is the spirit to get all you can while the getting is good. There is nothing new about it. We seem to have had the same thing following the revolution, and after the great civil war, and, as in previous instances, we will in the course of time put it behind us and go along our way as usual. There is no doubt but what the passion of immediate gain has been a big factor in all our national spirit, and this has been natural, but it is not a healthy national spirit. The sooner we shake it off and settle down the happier we will be.

"COLLECTIVE BARGAINING A FARCE."

This is the headline to a somewhat lengthy report of the building trade situation at Cleveland, Ohio, where collective bargaining has made the city a tightly closed shop where there are very few non-union workers and none seem welcome. Also it has made trouble, because while the employer is held responsible for his side of the agreements or contracts, the collective signatures on the other side become merely scraps of paper if the workers or labor advocates change their minds. Collective bargaining and the closed shop of unionism go hand in hand and they make a hard team to get along with congenially or successfully.

RUST PROOF STUFF.

We have heard quite a lot first and last during the past few years about the invention of rust proof metal for tools, machinery, etc. The latest story of this kind is about a Krupp metal product in the rust proof steel line with a hint that now since the Krupps are not to do gun making they may produce industrial products of rust proof character.

It will probably be a great day when we can get machine parts and tools, to say nothing of pipes and fitting, which are rust proof. Meantime however the great problem is to get enough of these things at a fair price regardless of their rust proof qualities.

THE SHOW ROAD OF THE WORLD.

The motor people and the good roads people have now raised the question of what constitutes the ideal highway, and the Lincoln Highway Association, with headquarters at Detroit, Mich., is after the answer to that question.

Discussion right now is turning on erecting and fitting up a section of roadway and landscape which shall constitute the show road of the world and contain the highest ideals both in the road construction and in the landscape surroundings.

Here we have a chance for a show down and final test out of road building material and methods. Incidentally it should furnish an opportunity for the advocates of the brick paved highways to prove their point and demonstrate the value of brick for good roads.

TO MAKE GOOD ROADS BETTER.

While we are building good roads at an encouraging rate we are also developing faults in them which lead to much fretting on the part of the public, and inquiry as to what is the matter with the roads. People want to know what is the matter with this particular road and that road because it gives way under traffic and develops bad spots along with the good spots.

Will P. Blair, one of our best authorities on road paving and road building, in treating of this subject in a paper recently, goes to the foundation of the matter by pointing out that we have built roads on theories which have not included enough practical consideration of the foundation under the roadway. He says that both railway and highway engineers have come now to realize that maintaining the surface of roadways depends materially upon the foundation below the ballast and artificial foundation upon which the wearing surface rests. We have been giving too much attention in the past to ballast and surface and not enough to the underlying soil.

He points out that there is promise of improvement in the future through the awakening of numerous agencies to the need for study and standardization of practices of treating the road foundation. On this point he says.

"The Federal Highway Council deeply in earnest to place road building upon a high plane of service to the country, has appointed a committee of which General T. Coleman DuPont is the chairman which is charged with the duty of examining into the "Subgrade and its Relation to Road Surfacing and Traffic."

"The Bureau of Public Roads of the United States is co-operating in this effort. The American Railway Engineers Association and the American Society of Civil Engineers through their appropriate committees are pursuing a research which will doubtless prove of great aid in reaching the desired results. Other organizations, university laboratories in considerable numbers, are co-operating and will furnish needed assistance. Out of all this there is reasonable assurance of great and early benefit."

FUEL, POWER AND TRANSPORTATION.

Fuel for heating purposes, fuel for power making, for kiln burning, and other industrial uses and transportation, are so peculiarily intermixed that the transportation situation is responsible for the shortage and high price of coal today. That is well enough known, the puzzling thing is how to find the answer.

Men of vision have been seeing the logical answer for some time but it will take time to work it out, and there is a difference between the logical answer and the emergency needs of the day. However, while looking after the temporary needs we should keep in mind the real answer to this question, which in short is a concentration of power producing units in big plants in the coal mining fields and the use of electric current for power distribution.

Eventually, if the present trend of events is a true guide to the future, we will not only have more central power plants and electric distribution for commercial power purposes, but there will be an electrifying of the railroads themselves, and it is this which will be probably the biggest factor in delivering us from transportation congestion and insuring a regular supply of fuel at fair prices.

The reason for this statement is found in the fact that the railroads themselves are the greatest consumers of coal, and they must handle and distribute to various coal chutes on their lines coal for their own use before undertaking the distribution of coal for industrial and domestic purposes.

The railroads, it is estimated, burn from 20 to 30 per cent. of the coal produced. When we cut out the transportation of this by electrifing the railroad and producing their motive power at stationary central power plants the saving in freight tonnage itself ought to pay a dividend to power plants to say nothing of relieving freight congestion.

Then with a centering of the big power plants for industrial purposes close to the mines, with their own short line trains, it would save another immense tonnage in coal, which goes to the many individual plants that would be replaced by the central plants. This should serve two good purposes. One is that of effecting economy in fuel and power production for industrial purposes. The other to clear the transportation system of this industrial fuel tonnage and make it easy to supply the increasing needs for domestic coal.

This is the answer which those with vision have seen and have been advocating for some time. It is the answer we will make eventually, too, unless there is some new and unexpected discovery in power production not yet dreamed of. Moreover we should keep this in mind even while struggling to supply the answer to various local emergency needs. The big answer is a future proposition that will call for time, energy and money, but we can and will attain it.

HUDSON RIVER BRICK MAN HURT.

On June 26, Mr. C. Larue Brockway, of the Brockway Brick Company, Brockway, N. Y., was seriously injured as the result of an automobile accident. His injuries consisted of a broken leg and two ribs and a scalp wound. We are advised he is convalescing nicely and expects to be up and around again in a short time.

HOMES FOR NORTH DAKOTANS.

In June last, Justice Day of the United States Supreme Court handed down a decision which will make for the betterment of every citizen of North Dakota. It sustains the program of the progressives of that State. It paves the way for the development of a great potential industry in the state-clay.

Thousands of square miles in the western part of the state are underlaid with vast deposits of high grade potter's clay, from which delicate art pottery is now being made at the school of mines, University of North Dakota, at Grand Forks.

Clay for Brick.

This same clay is being used for the manufacture of brick and tile. Under the home builders act, whose validity has been sustained by the supreme court, the state loans money for the erection of homes up to a maximum of $4,000 on a $5,000 home and builds the home, furnishing the materials at cost.

Within a year the state will begin the erection of houses of brick and tile, which will be the equal of any similar houses in this country at a maximum cost of $5,000.

The Home Builders Association is preparing to appropriate $100,000. of the $2,000,000. bond issue approved by the supreme court for the erection of a brick and tile plant, and its output to be sold at cost of production.

WESTINGHOUSE COMPANY RECOGNIZES MERIT.

Recent promotions in the service department of the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., are as follows:

G. W. Canney, formerly service manager at East Pittsburgh, has been transferred to the office of W. K. Dunlap, assistant to vice-president; L. C. Richards, formerly district service manager at New York, has been transferred to East Pittsburgh as electrical manager in charge of service department work in connection with all electrical apparatus, including service shops; A. D. Hunt, of the South Philadelphia works, has been made steam service manager in charge of service department work in connection with all steam apparatus; W. H. Keller has been made office service manager at East Pittsburgh in charge of all clerical, cost and accounting details of the service department.

CLAYWORKING MACHINERY WANTED FOR INDIA.

Editor The Clay-Worker:

We require the following machinery for a factory which we are going to erect for the manufacture of flooring tile, near Bombay, India, and will be glad if you can put us in touch with parties in the United States who manufacture that class of machinery, that they may send us their catalogues, etc. We will require one power-driven flooring tile press and two hand-power floor tile presses, with various sizes and patterns of dies for each machine; one encaustic tile press; one ball mill, ordinary size, suitable for handwork, as well as power, for powdering substances, like calcined flint, feldspar, etc., and one disintegrator of a size sufficient to prepare clay for four hand presses.

PHATAK & WALCHAND, Ltd.

Bombay, India.

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UNIVERSITY OF ILLINOIS CONFERS DEGREES.

At the Commencement of the University of Illinois on June 16, 1920, and at various times during the year, 162 Bachelor of Science degrees were granted to students of the College of Engineering, distributed as follows:

Architecture	18
Architectural Engineering	24
Ceramic Engineering	6
Civil Engineering	39
Electrical Engineering	31
Mechanical Engineering	31
Mining Engineering	4
Municipal and Sanitary Engineering	2
Railway Engineering	7

In addition the following advanced degrees in Architecture, Engineering and Physics were conferred:

Doctor of Philosophy	1
Master of Arts	4
Master of Science	7
Master of Architecture	1
Electrical Engineer	3
Mechanical Engineer	1

Insufficient Drain Tile in this seven-acre field cost $100 worth of wheat in one year. Moral—Proper drainage saves money.

INSUFFICIENT TILE MEANS POOR CROPS

DRAIN TILE.

The above picture shows how drain tile save. The same condition will be found all over the country.

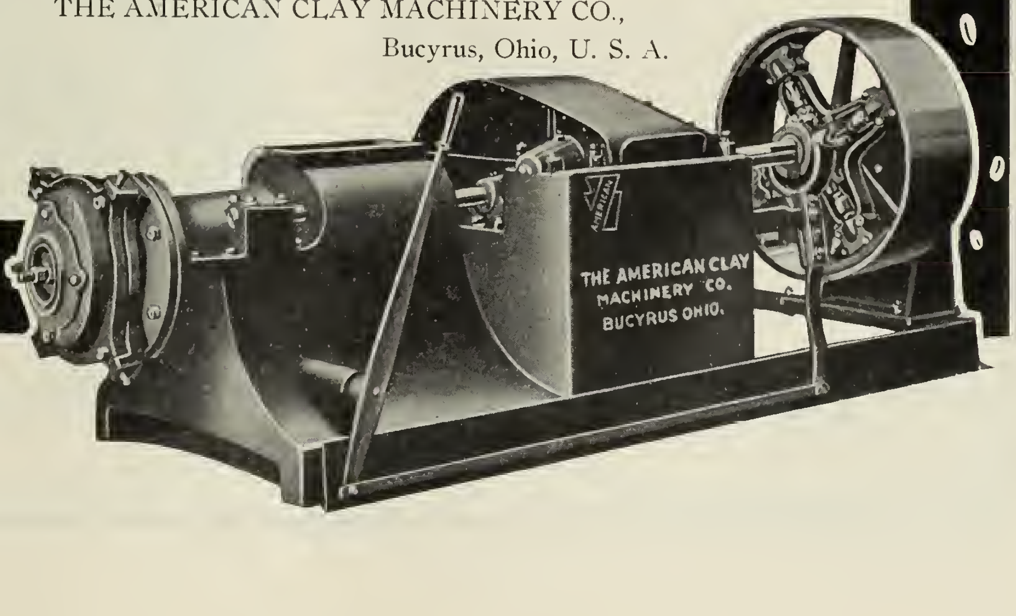
Tell the farmer about it. Show him how tile save by making crops, then sell him tile.

We build a full line of tile machinery and will furnish any unit or equip your whole plant.

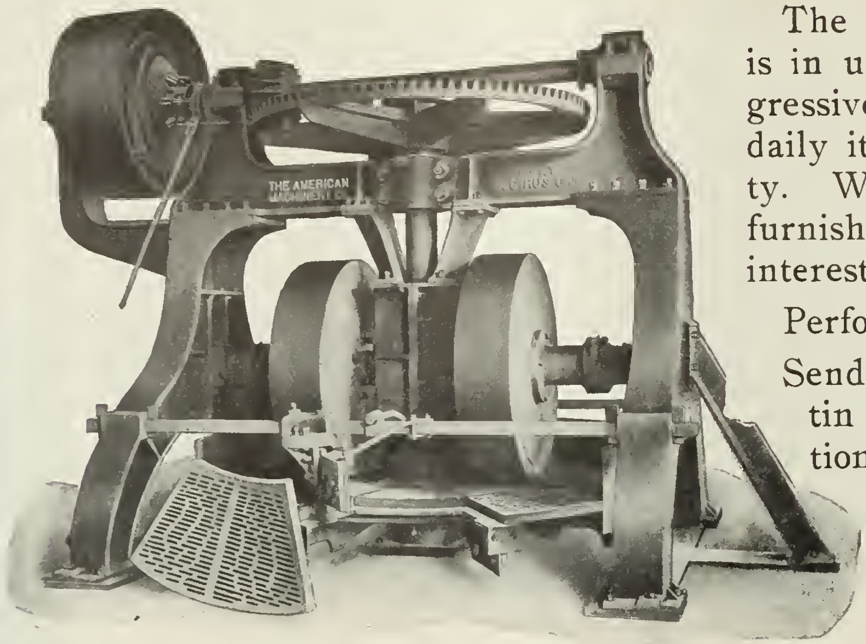
The American No. 281 Auger Machine, here shown, is especially adapted for tile. Makes all sizes, including 8 inches. Also fine on brick and hollow ware.

Get the No. 281 Bulletin.

THE AMERICAN CLAY MACHINERY CO.,
Bucyrus, Ohio, U. S. A.



American No. 57 Dry Pan.



American No. 57 Dry Pan

The American No. 57 Pan is in use in a number of progressive plants and is proving daily it's claims to superiority. We will be pleased to furnish a list of users to any interested Clayworker.

Performance beats promises.

Send for our No. 57 Bulletin which gives a description and specifications on this splendid pan.

The Burning Question

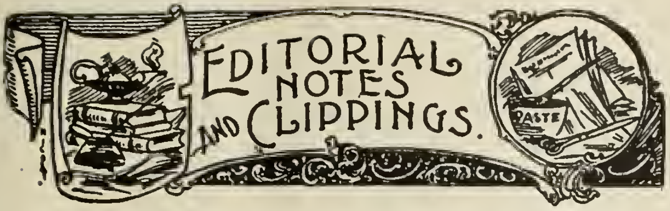
If it's a question of "Burning" we are able to help you.

Our Haigh Continuous Kiln is the most economical burning system for the Clayworker. Besides saving half of the fuel it saves a half of the labor and it turns out much better ware.

Ask for information and printed matter on the Haigh Kiln.

The American Clay Machinery Co.

Bucyrus, Ohio, U. S. A.



EDITORIAL NOTES AND CLIPPINGS

The Augusta Clay Products Company has been incorporated at Augusta, Ga., with $150,000.

The Paloma Brick Company, of Baton Rouge, La., has been incorporated with $100,000 capital stock.

The Charlotte Clay Products Company, of Charlotte, N. C., has recently been organized. The company is capitalized at $200,000.

E. E. Brass has been elected general manager of the Salveson Brick Company, of Petersburg, Ill., succeeding Thomas Salveson, who resigned to take up another line of work.

The Tri-State Brick, Tile and Coal Co., Columbus, Ohio, capital $600,000 was incorporated by W. Klein, T. W. Bryson, J. A. Roth, B. H. Vose, G. McClure, D. J. Davies and C. L. Dierker.

The E. J. Sterner Lumber Company, of Newark, N. J., has been incorporated with $200,000, and will establish a plant for the manufacture of brick, and will deal in brick, lumber and other building supplies.

The plant of the Parkersburg Shale Brick Company, on Staunton avenue, Parkersburg, W. Va., and a deposit of shale owned by the company were sold early in the month to the City National Bank of that city.

C. B. Mayhugh, general manager of the Star Brick and Tile Company at Bay View, Wash., contemplates establishing another brickmaking plant at Arlington, Wash. He has had the clays in that neighborhood tested, with very good results.

The Table Rock Brick Company, at Table Rock, Neb., reports a splendid business this year. They are turning out a fine quality of building tile. The plant is well equipped and the prospects are excellent for a profitable as well as a busy season.

The new plant of the Lock Haven Brick Company, located at Castanea, Pa., started in full operation the latter part of June. They turn out a rough-texture brick which is sure to gain popularity, and there is already a good demand for same in that immediate vicinity.

Stockholders of Harbison Walker Refractories Company, of Pittsburgh, Pa., voted to increase capital stock of the company from $27,600,000 to $36,600,000, and also ratified the board of directors' action declaring a stock dividend of 50 per cent. in common stock, payable July 15 to stock of record July 5.

In the case of the Builders' Brick Company, the Butte Sewer Pipe and Tile Company and the Northwest Coal Company, all of Butte, Mont., charged with combining in restraint of trade, the jury, after being out for ten minutes, returned a verdict of not guilty. The case was tried before the District Court at Butte and had spread over seven days.

O. F. Gillon, of Berne, Ind., and Jacob Zehr have purchased the Monroe tile mill which until recently was owned by the late John Heyelery of Monroe who was accidentally killed about a month ago while at work in the factory. The consideration was $18,150 and the mill was sold to the highest bidder, there being much competition in the sale.

Charles F. Clippert, of the George H. Clippert & Brother Brick Company and president of the Detroit Builders and Traders Exchange, in an interview with a Detroit Free Press reporter recently relative to the brick and building situation in Detroit gave out the following statement: "Some time ago I forcasted that the public schools and sewers would be taken care of as far as brick is concerned, and that has proved true," says Mr. Clippert. "While the brick manufacturers in Detroit have had many troubles to contend with including shortage of fuel and labor as well as transportation problems, they are now in full running order and are operating 100 per cent. capacity.

"We have settled our labor controversy, and the only matter that is interfering with us now is the fuel situation. In spite of that we are all operating to the limit and are able to take care of the demand for brick for schools, sewers and other public construction work."

The Duffney Brick Company, near Mechanicsville, N. Y., suffered a severe loss by fire which swept the plant June 24. Reconstruction work is under way.

The Hiwassee Shale Brick & Tile Corporation of Hiwassee, Va., has been incorporated with $150,000, and will erect a plant for the manufacture of brick and tile.

The Curwensville (Pa.) Silica Sand and Stone Company recently was incorporated with a capital of $200,000, by H. R. Griest, Harding Kimberland, Edwin Cross and A. W. Beatty.

The Connecticut Brick Mfg. Co., of Stamford, Conn., has been incorporated by Samuel Zatkin, W. E. Williams and Abraham Wolfser. The company is capitalized at $50,000.

W. E. Caldwell, of Louisville, Ky., Homer Wiseman, Clarence Becher, M. G. Gilchrist and H. W. Bowers, of Charleston, have organized the West Virginia Brick Company, of Charleston, W. Va.

The Union Fire Clay and Coal Company, of Dennison, Ohio, has been granted permission to increase its capital stock from $100,000 to $150,000. The additional capital will be used to improve the company's property.

The Ohio Farmers Clay Company, of Wooster, Ohio, has recently been incorporated with $50,000 capital stock. Among those interested are Captain P. Funk, W. A. Taylor, H. Syler, A. C. Ranser and F. L. Helm.

Because of the difficulty in securing coal for the operation of its plant, the Auburn Shale Brick Company, at Gettysburg, Pa., has been forced to shut down for an indefinite period. The plant has many orders ahead.

A large deposit of high-grade kaolin has been found near Springfield, Mo., by L. R. Rosenfeld, of Louisville, Ky., who has been making tests for a local concern. W. T. Croslen, of Springfield, Mo., is interested in the venture.

The reconstruction of the Universal Clay Products Company's plant at Sandusky, destroyed by fire last spring, is progressing rapidly, and the officials of the company now expect to have everything in running order by the middle of August or the first of September.

The Alvin W. Day Company, of Buffalo, N. Y., has made application for a charter. The company, which is capitalized at $15,000, will manufacture brick, terra cotta and pottery. Those interested in the venture are W. H. and F. E. Widner and F. T. Day, all of Buffalo.

The Bolin Brick Company's plant at South Zanesville, Ohio, has been taken over by a Kansas City construction company and will be put in immediate operation. The plant is now in good condition, but a number of improvements are contemplated, which include the installation of continuous kilns.

The Argillo Works, of Rock Island, Ill., has been incorporated to manufacture clay products at Carbon Cliff. They take over the old company of that name, which was unincorporated. Capital stock is listed as $200,000, the incorporators being Mary E. Robinson, Frederick Titterington and F. K. Rhoades, all of Rock Island.

Calvin Forester of Los Angeles, an expert brickmaker, is installing machinery at Standard City for making bricks. Clay has been discovered in the vicinity that has been examined by experts, who claim it to be the finest kind for brickmaking. With the machinery that Mr. Forester is installing he claims he will be able to turn out 60,000 bricks per day. One million bricks have already been ordered by the Standard Lumber Company.

The brick plant of M. V. Valentine & Brothers Company, situated at Valentines in Raritan township, near Fords, has been sold to the Seaboard Refractory Corporation of New York. The amount of the purchase price is withheld. The new concern is a $250,000 corporation. The officers are George A. Balz, president; C. VonHartz, treasurer, and John Gray, secretary.

Under the new owners the present plant, which now has a total output of 25,000 brick a day, will be enlarged so that the total production will be increased about double or 50,000 brick a day. The plant, including the clay land, covers five acres. When the new additions have been built about 150 men will be employed.

(Continued on Page 72)

Written for The Clay-Worker.

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.

ALTHOUGH THERE was a period of depression in construction work in Milwaukee and other Wisconsin cities during the month of May, building operations again resumed larger proportions during the past month and consequently the June construction figures have materially increased the record for the half year of 1920. In Milwaukee, building operations for the six months ending June 30, exceed those of 1919 by nearly $4,000,000, according to Building Inspector W. D. Harper. Similar conditions are also reported from other sections of Wisconsin.

In 1919 there were 8,342 permits issued for work valued at $7,806,016, compared with 11,924 permits for construction valued at $11,375,891. Building records reveal a heavy falling off in the erection of flats and other dwellings. During the first six months of this year there were 345 permits for dwellings, mostly bungalows, issued together with 22 duplex flat permits. The corresponding six months last year saw 444 permits issued for dwellings and 97 permits for duplex flats. The construction work issued this year is confined largely to such industrial buildings requiring large numbers of brick, building tile, etc.

At a recent meeting of the directors of the Kewaunee Clay Products Co., Kewaunee, Wis., C. Schmiers was elected president of the company to fill the vacancy caused by the resignation of R. J. McMahon, who only a short time ago succeeded Mr. Schmiers as president. The concern has started operations although there has been considerable delay in getting production fully under way. In speaking of the future prospects of the company, Mr. Schmier says every indication points to an immense business in the manufacture and sale of brick and tile. Sufficient orders have already been received to keep the plant going at full capacity for several months.

Revival of clay products manufacturing at Galesville, Wis., is being agitated by the local business men and the press of that city. The Galesville brick yards have been idle for several years although fully equipped with modern machinery. Some of the most substantial as well as ornamental business structures of the city are built of brick made in the local yards. It is suggested that a stock company or an individual employ an expert brick man and resume operations to make the annual supply of brick for Galesville at home, holding that the product could be sold cheaper and exasperating delays eliminated.

The local yard of the Langenberg Brick Manufacturing Co., Stevens Point, Wis., has been in operation for some time in charge of John Weeks. Several hundred thousand brick have been turned out. Indications favor a busy season with a good demand until cold weather sets in. The company has made large shipments to Grand Rapids, Wis., for the new plant of the Consolidated Water Power & Paper Co. The Whittlesey yard of the Langenberg company has also been opened and is in charge of George Langenberg. A fine bed of clay has been uncovered for this season's work and a large number of men are employed to secure a large production. Besides selling its own product the Langenberg company handles a large line of brick and clay products of outside manufacture.

Protest against the recent order of the Interstate Commerce Commission, prohibiting the use of open cars for all purposes except coal shipments, is made by the building material supply men of Milwaukee. It is contended that empty cars which are being sent back to the mines could be loaded with building material consigned en route to the mine regions. The demoralized condition of transportation resulting from the car order, is largely responsible for the delay in starting and in completing construction work of both public and private nature.

A review of the situation in the supply field is given in a recent interview with Arthur Curtiss, manager of the Wisconsin Building Material Co., Wausau and Schofield, Wis., with yards at Clintonville and other Wisconsin cities. Mr. Curtiss is quoted saying:

"I am not a pessimist; nor do I look for hard times or any serious financial trouble, but the present outlook is not cheering and business men are proceeding with caution.

"The lull in building operations, which prevails in this and other states, is due to scarcity of cement, to labor conditions, to the difficulty in getting many sizes of nails, to the action of federal reserve banks in restricting loans, and to high interest.

"The slump in lumber prices in the west is not caused by any surplus in the market, but to the action of the banks in forcing immediate sales to secure cash."

A. BADGER.

Written for The Clay-Worker.

NEW YORK AND VICINITY.

THE situation in New York is not essentially different from what it is in other eastern building centers and very little new work is under consideration. Some large contracts placed months ago are in process of development, but aside from this conditions have not changed materially. High costs of building material are holding back all present development. Moreover, the high taxes of various sorts and a number of other influences are exerting a depressing influence upon the building industry and progress has about ceased. The labor world is not yet stabilized and employers never know at what minute their employes are going to insist upon higher wages, regardless of what they are getting now, or what agreements they have made for present guidance. The brick business is probably no better and no worse than others, but it suffers along with the others more or less severely. The outlook indicates a declining rate of building for the remainder of the year, and not until improvement gives opportunity for money making will investors in building enterprises take hold again. These are not pleasant facts, but they tell the situation as it stands today and those interested might as well know now that they are not likely to get any more business for a time. Eventually the conditions will get back to where they were, but not right away. Common brick are priced at $30.00 or thereabouts, in and around New York, but shipments are small and sales are small. Barges are coming down the river with brick to fill orders previously placed, but new business is lacking. It is a fact, however, that the quantity up the river to ship is not so great as commonly, therefore manufacturers are not suffering as severely as the slow building conditions might indicate.

Hudson river yards are burning, but all are operating under a scale production that is less than normal. They will make a fair season's output, but nothing like what was hoped, or what would have been made had the building situation continued better. Labor is a factor that is holding back much business. It is impossible to secure sufficient men to operate the yards. This will result eventually in the installation of machinery, but the time has not yet come for that. Probably the yards will accumulate some stocks which they can carry over to next season and use them early. It is not likely that the yards will speed up any more this season. They will make what they can with their present employes, but beyond that they will do virtually nothing. The market is too slow to encourage any attempt to develop business beyond what seems to be current needs.

BURTON.

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40% TIME
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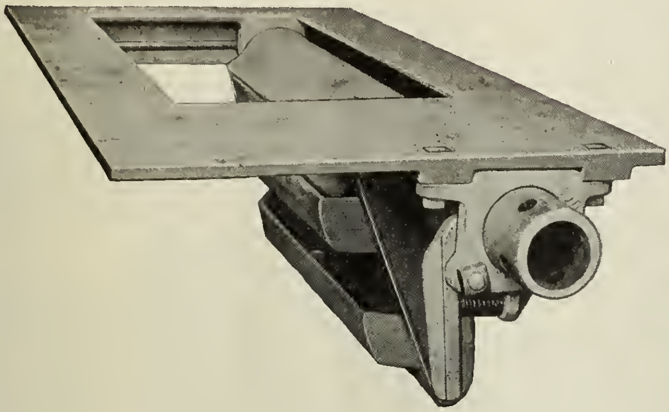

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Try It On One Kiln

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EDITORIAL NOTES AND CLIPPINGS—Continued.

Considerable machinery and operating equipment will be purchased by the National Shale Brick Company, Martinsburg, W. Va., recently organized to establish a local brick and burned clay products plant. About fifty acres has been acquired, and the works will cost about $250,000, including machinery. F. Vernon Aler is president and Charles L. McGee secretary, both of Washington, D. C.

An injunction to restrain members of the United Brick and Clayworkers of America from interfering with the operation of the plant of the Lehigh Sewer Pipe and Tile Company, at Fort Dodge, Ia., was recently granted that company. There has been a strike on at the company's plant for some time, and the company claims that members of the union interfered with the men who desired to work.

Announcement has been made of the opening of sales offices at Memphis, Tenn., for distribution by the Reliance Brick Company, of Kansas City, Mo. The new firm will sell enameled brick, tile and building materials in the Memphis territory. C. M. Teats, of Muskogee, has moved to Memphis to assume the managerial duties of the local branch. He was formerly secretary of the Oklahoma Brick Manufacturers' Association.

William H. Jones was instantly killed while at work in the engine room of Schmults' brick yard, Hackensack, N. Y. Mr. Jones was engineer at the plant and just before the accident, complained to one of the men that he was seized with dizzy spells lately. It is believed that during an attack he had fallen over the railing that was erected in front of the fly wheel and was struck by the wheel, which caused a crushing of his skull, resulting in instant death.

The Saratoga Fire Clay Company, of Lisbon, Ohio, has taken over the Powers Clay Works at Negley, that state, which have been operated by the Negley Clay Company, the Lisbon company purchasing the plant outright, including the mineral holdings. The plant has a capacity of 100 tons of ground clay per day. The Lisbon company is now operating three clay plants, including the Lisbon, Negley and Cannelton, Pa., plants. Coal is also mined by the company.

A company headed by C. W. Martin, of Dallas, Tex., has been organized to erect a large clayworking plant at Bridgeport, that state. The concern will be known as the Phoenix Clay Corporation and the plant will have a capacity of 125,000 brick or 150 tons of building tile. T. M. Dees and Eugene DeBogerty, both of Dallas, are vice-president and secretary, respectively, and J. V. Montrief, of Bridgeport, an experienced clayworker, will be in charge of the plant.

The Sunderland Brothers Company, of Omaha, extensive dealers in brick and other building materials, recently purchased the Mariner Marble and Tile Works, of that city. Albert D. Klein, who has charge of the brick department of Sunderland Brothers, writes that things are running along about as usual with them, although their business has been affected, in common with everything else, by freight and labor conditions. Mr. Klein spent his vacation this summer up in the Minnesota lake region, where his family is sojourning during the heated term.

B. C. Rowe has bought an interest in the Moscow (Idaho) Fire Brick and Clay Company and will assume active command of this important industry. The company, formed several years ago by Moscow citizens who had faith in the future of the country and knew that they had one of the best clay deposits in the West, has been "marking time" during the dull period during and following the war, but is now preparing to enlarge its plant and extend the scope of its activities. The company has a fine plant in Moscow and one of the best beds of clay to be found in that vicinity.

A number of Columbia City, Ind., men have formed a company for the purpose of manufacturing brick and tile and have incorporated at $10,000 under the name of the Columbia City Brick and Tile Company. The company has taken over the old Justus Sherwood tile and brick mills, lately owned by Cleon Foust, and will be ready to begin the manufacture of their products within a few days. The company has also taken over the engine and boilers of the Zuber Drain Tile Company and these have been installed at the new brickyards. The officers of the company are: President, Cleon Foust; vice-president, Job Burnworth; secretary and treasurer, Rev. L. A. Luckenbill; manager, Frank Wakeman; assistant manager, Baird Pressler. The present plant has but one kiln, but later on the company will probably build at least two new kilns.

The Soisson Fire Brick Company, of Connellsville, Pa., has shipped to Philadelphia since the first of January 850,000 face brick, and in every instance these have gone into buildings of the first rank. Ohe of the structures which is using them for the facade is the new Jewish Synagogue, one of the handsome buildings of the Quaker City. The company shipped 190,000 to Salisbury, for use in the construction of state highway work there, and the paving blocks of the company have been used in considerable work on the State Highway in the vicinity of Philadelphia.

Fire of an unknown origin almost completely destroyed the plant of the Danville Brick Company at Danville, Ill., between 3 and 5 o'clock on the morning of June 21. The oil house and the office building are practically the only structures untouched by the flames. T. J. Hawkins, secretary-treasurer of the company, estimated the loss roughly, shortly after the fire, at $50,000. The work of reconstruction was started, men being put to work clearing away the debris as soon as the ruins had cooled sufficiently. Harvey C. Adams, president of the company, was out of the city at the time of the fire.

The Precision Grinding Wheel Company, is a new corporation, which is now erecting the first unit of its abrasive plant at 8300 Torresdale Ave., Philadelphia. The building of brick and concrete, will contain six kilns and the company has sufficient land to erect six or eight similar units. A complete line of grinding wheels will be made. The president of the company is A. S. Vane, and Herman Plusch is plant manager. Both have had wide experience in the manufacture of abrasives there and elsewhere, and Mr. Plusch, as a chemist, has done much work both practical and research in clay, clay products and abrasives.

At a special meeting of stockholders of The Monroeville Clay Products Company held at Monroeville, Ohio, the reorganization committee's agreement submitted for approval was unanimously accepted. This agreement calls for the incorporation of a company under the name of The Clay Products Manufacturing Company, capitalized at one million dollars and divided into 10,000 shares of eight per cent. cumulative preferred stock of $100 par value, and 10,000 shares of no par value common stock. The $275,000 of assets that The Clay Prdoucts Manufacturing Company is taking over from The Monroeville Clay Products Company is represented by plants in operation at Monroeville, Fredericksburg, and Berlin Heights, a new modern plant at Monroeville which will be in operation shortly and a coal mine at Fredericksburg that supplies the various plants with fuel. An option on 100 acres of shale land at Vermilion is also inclued, and The Clay Products Manufacturing Company will proceed at once to erect a modern plant of three units on this site, where the company will have the advantage of the cheaper water transportation to the lake cities. The cost of this plant will be approximately $500,000.

$12,000,000 COAL DEAL.

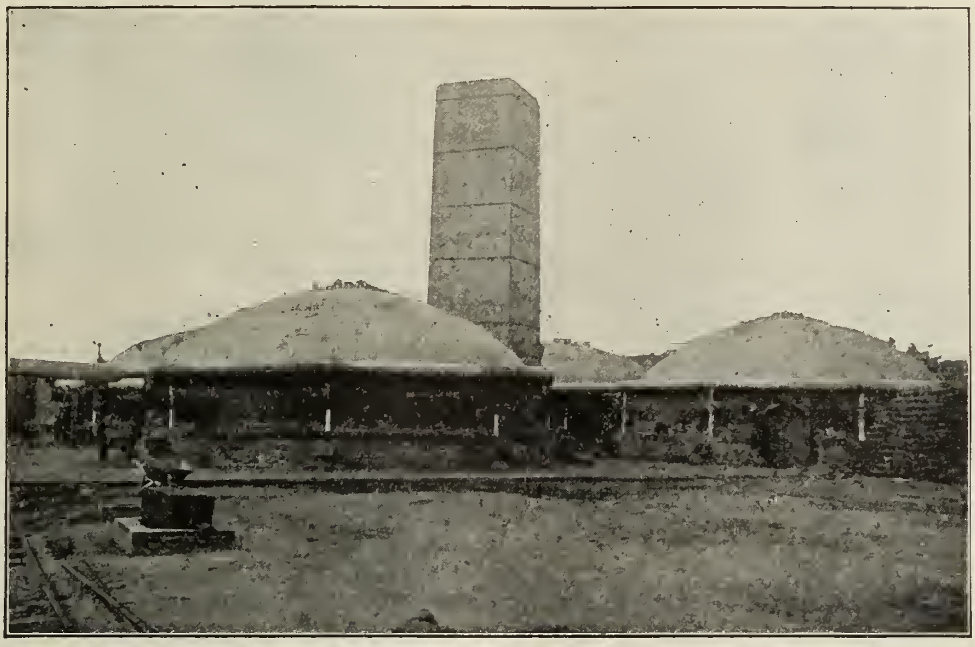
Industrial Corporations to Insure Supply for Their Plants.

West Virginia, Kentucky, Ohio and Pennsylvania coal lands and going mines valued at $12,000,000 have passed to the control of a number of big industrial corporations which are thus insuring that their respective manufacturing plants will have plenty of coal for power purposes. The Bertha Coal Company and affiliated corporations are among those purchased, the present annual output of the operating mines on the lands being 8,000,000 tons of coal.

Engineers have been engaged to plan the thorough utilization of the properties with new machinery installations to provide for an annual output of 12,000,000 tons of coal. The character of the companies which have secured control of the properties is readily recognized in the mention that among those interested are the following: General Motors Co., Harbison-Walker Refractories Co., Armstrong Cork Co., Clark Paper Co., Quaker Oats Co., Standard Parts Co., Cumberland Glass Manufacturing Co., Sebring Pottery Co. Others interested include a number of well known New England textile manufacturing corporations and several independent steel manufacturing companies.

THE

Underwood Producer Gas Burning System



U. S. BRICK CO., TELL CITY, IND.,

Makes the following statements:

"We have **saved 30% on our coal bills** ever since we installed the system.

"The cost of handling coal is practically nil.

"After five years' use we can state that we have not spent a penny for repairs on producers or fire boxes.

"Saving in time is most important; we burn in **4** days when formerly it took **8** days.

"We attribute the **rich colors obtained** to the Gas System. We never made an investment that gave such **remunerative results."**

Stop wasting your fuel and labor with old methods.

For complete information write

The Manufacturers Equipment Co.
Dayton, Ohio, U. S. A.

Written for The Clay-Worker.

CINCINNATI BRICK AND BUILDING NEWS.

IT WOULD SEEM THAT a general summer dullness has affected the building situation in this section. This is not surprising, of course, when the entire phase of the industry is surveyed. The obstacles that have had to be met by the clay products manufacturers and dealers have been many, and serious enough to place a damper on their ardor. And still in the face of this condition they have fought hard and with determination to combat the elements that seem to balk their endeavors.

When high costs, and this includes materials, labor and a disinclination to build, strikes, railroad car shortage, delays, embargoes and a desire on the part of the public to hold off is considered, it is small wonder that there has been a set back to the demands, and that there has been any real progress made is to the credit of the men who have not faltered in the hour that has been anything but an agreeable one. The situation has therefore been of the kind that makes any reasonable showing a good one, and that should be viewed in this light.

In this section there have been a number of large projects considered, a few only of which have actually been put into realization, but more, it would appear, are to be started before very much longer. There is a keen need for more buildings here, as the rents are being advanced in a number of cases, showing that office space is not difficult to rent, even at higher prices. If there was an excess of office space this would not be the case, and it is the best argument that there is a need for more business houses of this type. Several large buildings that were to have been started months ago are still being held up, seemingly on account of the high prices for both materials and labor.

The best indication of what has been done in the way of building in the past month, is shown by the number of permits issued for June. While the amount seems large, this is due to the fact that one large permit, that of the Baldwin Piano Co., calling for $1,250,000, made the sum total of $2,375,375, appear flattering. Work on the Baldwin plant has been under way for some weeks. The number and cost of residence permits has been rather limited. More permits for alterations have been taken out by far than for new structures. There were only 25 permits taken out for new homes, ten of which were for brick. This is not by any means a pleasing outlook.

There was a fire at the plant of the Mitchell Brick Co., Delhi, Ohio, some days ago, causing a loss of $3,000. Two buildings were destroyed and two men were injured, the accident being due to the cutting of a fire hose by a Big Four passenger truck, which struck the main. The fire is believed to have been caused by an overheated brick kiln. The fire was confined to the buildings destroyed, firemen keeping the flames from catching the office and other buildings at the plant.

The first half of the present year in Cincinnati has shown practically no progress toward solving the housing question, and the shortage of homes still exists here. The rule has been that no builders will do much work unless there has been a contract made in each instance. So this keeps the number of houses builded for the open market at a very low figure. The companies that in the past made this a feature have looked toward the commission plan, and are not doing much to foster the idea of home building. There has been for the most part only structures used for factory purposes and others of a public nature. The home idea has been dragging here in a way that has been far from hopeful.

In the suit that was filed some time ago by the Jeffery-Dewitt Co., vs. Earle T. Montgomery, et al., as Montgomery Porcelain Products Co., Franklin, O., Judge John W. Peck, of the United States District Court, has issued a preliminary injunction restraining the defendants from disclosing information as to the character of two inventions covered in applications for patents, and relating to alleged improvements in relating to ceramic insulating material for spark plugs pending the final hearing of this case. In its bill the complainant charged that Montgomery, who was in charge of its recearch laboratories and who, with an official of the complainant, made the discoveries sought to be patented, intended to disclose the secrets to others.

The Builders Brick Co. note that while there is nothing of special note at this time they are able to obtain some business that is helpful. The orders are far from being plentiful, however they have secured the terra cotta contract for the new Baldwin Piano Co. plant. The present is not conducive to a large demand for brick or other clay commodities.

The Evans Builders Co. state that while business is fair, the serious condition with regard to the car shortage situation is such as to make the delivery of clay lines one filled with a great deal of annoyance. Business has not been very extra, and the additional bother of securing cars makes it still more annoying.

Reports with the Cincinnati Clay Products and Supply Co., are to the effect that business is very much off these days. There has been little of interest noted and the building situation at this time is slow.

While there has been something in the way of orders obtained by the Moores-Coney Co., the demand for brick has been only fair. The general market is dull, and there is little of a favorable nature seen in the immediate prospects for the industry.

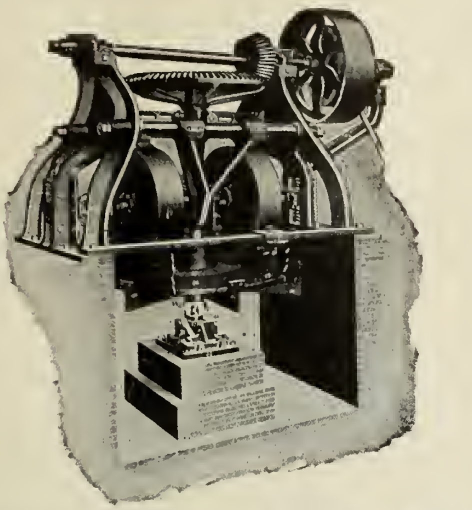
The D. C. Shorey Brick Co. seems to be enjoying a very fair demand for face brick these days and manage to keep things moving along in a fair way, so that the orders are large enough to make the present at least less unfavorable than it would otherwise be, when the situation generally is so dull.

The Columbia Amusement Co., of New York, will spend about $600,000 in the building of the new theatre to be erected at the southeast corner of Seventh street and St. Clair alley. The plans are being drawn by A. McElfetrick, New York, Leverman, Klein and Hein, Chicago, are the structural engineers on this project. The theatre will have a seating capacity of 2,500 persons.

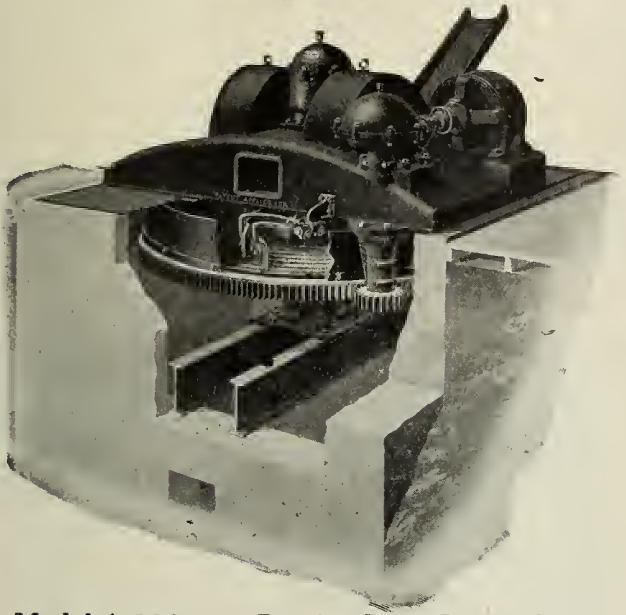
A brick bungalow is to be builded by W. R. Curle, at Cynthiana, Ky., 40 by 56 feet. The plans are being prepared by Frederick W. Baack, architect. CINCY.

KICKERS FOR REVENUE.

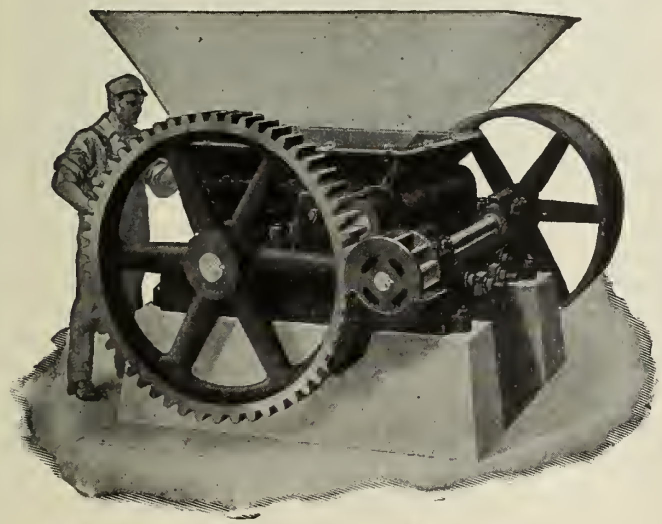
A brick man who prides himself on the quality of his product and the clean-cut methods in his business was the other day dictating a letter to a customer who was plainly indulging in that form of sharp practice known as kicking for revenue. The customer, in sending in his check for settlement, had reported a quantity of soft brick for which he had cut a few dollars from the price, and he claimed that a certain quantity of other brick were not up the full size of the sample and for these he deducted a couple of dollars a thousand. The brick man was laying the law down to him, and among other things he found useful in this was the fact that there are standard sizes and specifications for brick which take cognizance of unavoidable variations. We were impressed in listening to that dictation with the idea that association membership is a good thing, and that kickers for revenue are pests who eventually harm themselves more than anyone else. He who indulges in sharp practice these days generally winds up by cutting himself.



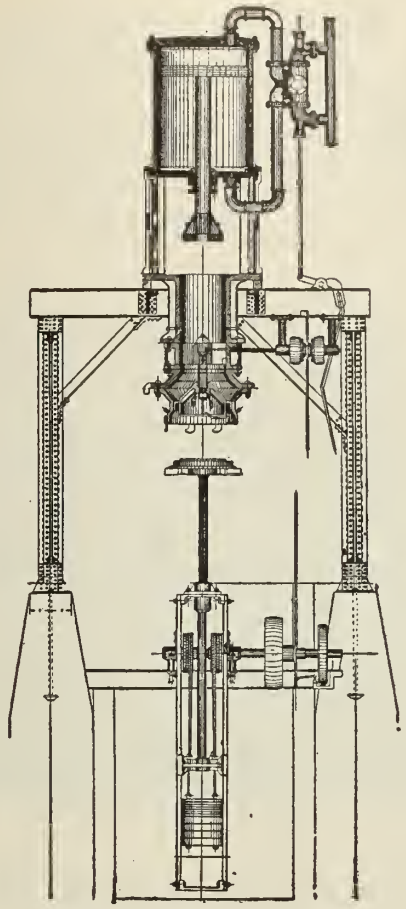
Standard Grinding Pans Made all Sizes



Model A-300 Step Bearing Type Dry and Semi Dry Grinding Pan



Single Roll Crusher



Sewer Pipe Press

Machines for
Crushing,
Grinding,
Pulverizing,
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Tempering,
Mixing and for

Elevating and Conveying all kinds of Materials.

Steam Presses for Making Sewer Pipe, Drain Tile, Hollow Block, etc., are Manufactured by

THE STEVENSON CO.,

Gen'l Office and Works **Wellsville, Ohio**

Engineering and Western Sales Office,
Monadnock Bldg., Chicago, Ill.

NOTES FROM DIXIE LAND.

BRICK people at Nashville say Central Tennessee building is a little backward. Retail lumber, laths especially, have declined. Other materials in the main rule firm and high. At Memphis many large buildings are under erection but since April building has declined there, attributable to financiers being conservative and high prices and doubtful crops, though farming conditions have improved very much the last thirty days.

Fulcher Brick Co., 165 Fourth Ave., North, Nashville, Tenn., with yards on Lebanon Road and Illinois Central R. R., are active in brick manufacture, contracting, etc. They are furnishing the brick on several summer contracts in Nashville and middle Tennessee towns.

E. T. Lewis and Son, at Nashville, Tenn., successors to the Hermitage Brick and Tile Co., with plant on Berry St., are busy this summer filling local and out-of-town contracts in brick and clay products.

Crump Lime and Cement Co., corner of Lamar and Willett Sts., Memphis, are furnishing fire brick, terra cotta and similar products on a number of new modern homes being erected this summer in Memphis.

The Standard Brick Co., with plant on the Hindman Ferry road, Memphis, are manufacturing a line of colonial red, brown matt and common brick.

Moss-DeVoe Brick Co., composed of Louis Moss and Clarence DeVoy, have been overhauling one of the old brick manufacturing plants at Memphis and will be manufacturing a line of building brick this season.

The large new addition to their warehouse, which will double the capacity of their plant at the plant of the Fischer Lime and Cement Co., Walnut St., Memphis, is being pushed to completion. The yard will cover about a block. The new building will be finished in ornamental terra cotta and tile. The company has subsidiary interests at Greenville, Miss. Little Rock, Ark., and other points, and is one of the real live active concerns of the Central South.

V. P. Phillippi and Co., Memphis, Southern Express Bldg., in addition to handling a general line of barrels and kegs are also featuring stone jars, stone churns and pottery products.

Johnson-Porter Clay Co., at McKenzie, Tenn., are shipping a line of clay from their mines at that point and Henry Station.

The Jas. Alexander Construction Co., of Memphis, have been awarded the contract for a large bakery at Memphis, to cost more than a half million dollars and to be erected for the Iten Biscuit Co., of Omaha, Neb.

Malone and Bowden Co., Walnut St., Memphis, are completing elaborate fancy tile jobs at the Whitehouse Cafe, Memphis, on Beasley's, Inc., Clothing Store, S. Main St., and other work on Main and Madison Sts.

Crawford-Dunlop Co., at McKenzie, Tenn., have begun operations in the clay mining and shipping district of Carroll county. DIXIE.

It now looks like that about the time the railroads get their rates raised to produce that extra billion a year said to be needed, a whole lot of the people will be shipping by truck, and so much freight will be going over the truck route that the railroads will still find themselves shy on revenue. Any way we look at it, the railroads appear to be in the middle of a bad fix and it is going to take some hard constructive work to put them into the shape they should be.

CLAY LANDS FOR SALE AT ATTRACTIVE PRICES.

Possible to Recover Sufficient Coal to Burn the Clays.
Railroad Switches Already in Operation.
Good Water Supply.

IF you are in the Market for:
Lower Kittanning
Clarion
Oak Hill
Sciotoville or Olive Hill
} CLAYS

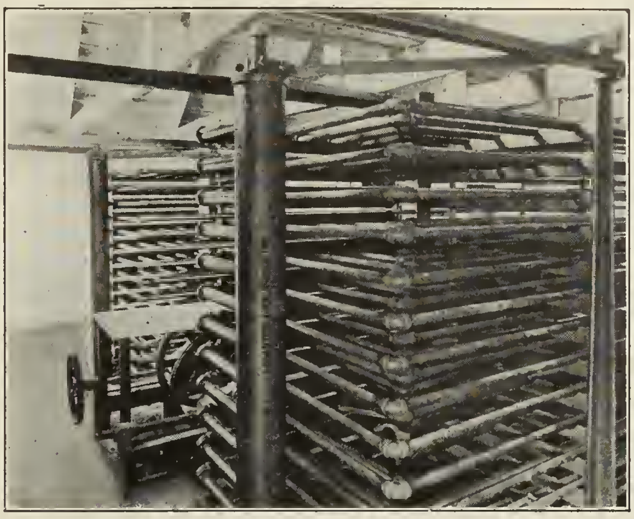
You now have an opportunity to buy large acreage of Ohio's best known building and fire brick clays at bargain prices. Roughly estimated, the territory contains over 80,000,000 tons of the above clays in Vinton and Jackson Counties, Ohio, on the B. & O. and D., T. & I. Railways. In one operation it is possible to recover a four-and-half seam of coal with a clay bed from five feet and upwards in thickness. In some places the clay measures over ten feet. The Sciotoville Clay is one of the highest grade clays in the country. These clays have been manufactured at Oak Hill, Hamden and McArthur, Ohio, for many years, and their product enjoys a wide and favorable reputation. All the property, consisting of eight thousand acres, reached by switches. Labor trains run daily from Wellston. Houses on the property for Superintendents and others. Ample water supply. Will divide the acreage to suit purchasers or sell the entire territory.

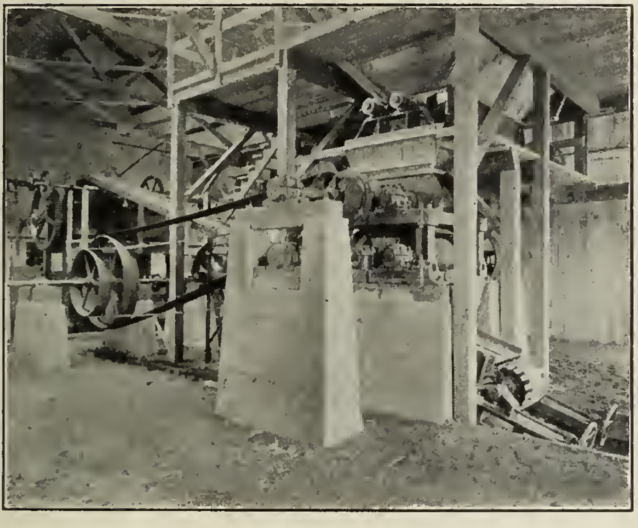
All inquiries should be directed to A. K. Williams, Engineer, Superior Colliery Company, Wellston, Ohio. Facilities will be provided for those desiring to see the property.

All proposals subject to prior sales.

"MARTIN" Pipe Rack Dryers
"MARTIN" Cable Conveyor Systems
"MARTIN" Brick Machinery

Our developments of the original "Martin" PIPE RACK DRYERS, CABLE CONVEYOR SYSTEMS and BRICK MACHINERY are the result of twenty years' actual experience in the shop and in the field. Our organization includes men who have specialized for all of these years on this particular line of equipment.





Note the clean cut details of both the PIPE RACK DRYER and BRICK MACHINERY equipment, as shown in these illustrations. Everything is simple, strong and of correct design. All iron and steel construction throughout. Practically no repairs. We have built five complete plants within the last six months, and every one of them in successful operation.

LANCASTER IRON WORKS, Inc.

Lancaster, Pennsylvania

New York Office,
501 Fifth Avenue

James P. Martin, Mgr.
Clayworking Machinery Dept.

Join the National Brick Manufacturers' Ass'n. Join the Common Brick Manufacturers' Ass'n.

Written for The Clay-Worker.

SEEN IN NEW JERSEY.

WHILE A FAIR DEMAND continues for all sorts of burned clay products the call is not as great as it was a month ago. Buyers are showing rather less interest in all varieties of building materials and brick and other forms of burned clay are suffering with the others. Sales were heavy earlier in the season and sellers are now exerting themselves to secure deliveries sufficiently early to enable the use of the materials this year. It is useless to undertake to say anything about shipments. Everybody who has had anything to do with shipments this year knows the story. It is just the same as it has been and no one seems to see indications of improvement. Here and there a seller seems able to get a portion of his cars through, but in the main the situation is quite as discouraging as it has been for many months. With building operations slowing up and with other deterrent factors becoming operative it is possible that sellers will have a chance to get caught up on their orders before the demand increases so as to cause a crush again. At any rate, the outlook for something of this character is so much better now than last month that it is worth mentioning. But to say that the solution of these problems has come is quite another matter.

Prices have not fluctuated much during the month. In all the principal consuming and distributing centers of the state the figures remain around $30.00. In some localities they are a shade more and in others a shade less. But they do not seem to get far away from the $30.00 point. If they go much above that business ceases. If they fall below the manufacturer and the seller can see nothing in the price for them and cease to make or offer. It would appear, therefore, that $30.00 or thereabouts will remain the standard price for the remainder of the season. Nothing now in sight indicates much change. Perhaps a fluctuation of a dollar or two may be registered, but that doesn't make very much difference. Newark is quoting $32.00. Jersey City names a price of $31.00, or thereabouts. Paterson is asking $30.00. Trenton figures are $27.00. New Brunswick is selling at $28.00. Camden reports no business to speak of and prices held steady around $30.00. Hackensack is asking $27.00. In Englewood the price is $33.00. Rutherford wants $34.00. Ridgewood has no business, but is asking $30.00. Washington is figuring on as much as $34.00. The prices named seem to hold good in almost all sections, varying a dollar or two with the rate of demand in various localities. Movement into consumption has slowed down. Few new contracts have been made during the month and both manufacturers and sellers are now concerned with deliveries rather than with making more or even of selling more.

The building situation, taking the state as a whole, is not as promising. Newark, the largest city, whose building permits have been so large all through the present year, showed less for this June than for June last year and July has gone below June, though without the figures at hand it is impossible to say what the total has been. The Board of Trade is supporting a movement of the erection of 100 dwellings, but that is about the limit of new business proposed during the past week or two. It is pointed out that what is true of Newark is true in some degree of Jersey City, and of Paterson, Passaic, and other important centers. Newark is to have a huge motion picture theatre, the largest in the state, to cost about $1,000,000, but aside from that its new construction is very limited.

Many builders complain of the high cost of brick, but manufacturers point out that it is quite impossible for them to do business unless they get the higher prices which they are now charging. They point out, for instance, that it costs approximately $2.00 a thousand to move brick a short distance to a main line of railway. Then when they get to this main line, unless the manufacturer is favored by fortune, he cannot get more than half the cars he needs and sometimes he is obliged to pile his brick awaiting cars to take them away. And that means additional expense of handling. Moving brick within a fifty mile limit has increased from 60 to 200 per cent above pre-war expenses and is still advancing. Where it will stop no one can say. With no more than half the cars needed to convey the brick to their destination, Eastern manufacturers see little opportunity to improve conditions much this year. They have curtailed production and are turning out only a fraction of capacity, largely because of the additional expense of manufacture, entailing greater investment and expenditure of money while making, with relatively little probability of selling more than a small portion of the output.

The situation in Hackensack has not changed during the month. The yards are operating, some to as near capacity as they can, but others are not. Motor delivery is helping the situation in this locality. The manufacturers can deliver in all the centers of the Northern part of the state at a fair price and they are certain of their deliveries. The price at the yard is named as $27.00 for hard red with light grades much lower.

Frank Stevenson, formerly with the Trent Tile Company, of Trenton, and later with the Old Bridge Enamel Brick and Tile Company, Old Bridge, has been appointed plant superintendent of the Frontenac Floor and Wall Tile Company, at Kingston, Ont. The plant has been closed for two years, but is to be rehabilitated and put in the pink of condition for capacity output.

The Raritan Hollow Tile Corporation has been incorporated at Woodbridge with a capital stock of $100,000. M. A. Harkins is the registered agent. A. D. Watson is the head of the company. The concern purposes taking over an existing plant and using it to make hollow building tile.

The Trent Brick Company, Trenton, is planning to install an industrial railway and operate about fifty flat cars for conveying brick from the pallett racks and from the steam drier. The system is to lead to the kilns, with suitable transfer points to facilitate handling. A. W. Goulding, treasurer, of the concern, and a live wire in the brick business, is directing the operations.

The Hackensack Brick Company, at Hackensack, is using six motors in its present deliveries. It has been sending out a quarter of a million or more which it carried over from last season. Now its new burnings are ready for delivery. This company has a good many of the smaller contracts and delivers the material as wanted.

The Millington Clay Products Corporation has been organized at Millington, for the purpose of operating a plant to manufacture various clay products. The capital stock is $30,000. John T. Gillespie and Charles L. Crabb are the moving spirits in the enterprise.

A. L. B.

The scarcity of iron should make an opening to push vitrified clay pipe into some of the work it has been crowded out of by iron propaganda in the past.

If we could get the same team work in business that we see so much of at the ball game, there would be but little need to hire efficiency experts—results would just come naturally.

WHY

Is it necessary to replace man power with machinery?

First, scarcity of labor; second, machinery can do the same work much more efficiently and at less cost; third, good business judgement tells us to cut down production costs wherever possible.

HOW

Can brickmakers do the above? By installing one of our S S S Special Automatic Brick Machines, which automatically sands the moulds, places them in the machine, bumps, dumps and carries the pallet of Brick to your conveyor system.

Figure it out for yourself, what does it save you?

WHEN

As our entire last season's output was sold long before the season started and several plants were disappointed with deliveries, place your order now and insure prompt delivery.

The Arnold Creager Company

New London, Ohio

LABORATORY TESTS FOR TEXAS CLAY DEPOSITS.

Testing clay materials in Texas suitable for making brick has been one of the experiments made this year by the chemical laboratory of the University of Texas, according to the Manufacturer's Record. The purpose of the testing is to find especially high-grade clay for the manufacturing of building, paving and fire brick. Samples were sent in by different persons interested in particular deposits and were tested first by chemical analysis and then by burning. From such experiments it is possible for the university to get conclusions as to the commercial value of the deposits and to give advice as to the best machinery and methods of manufacture of the brick.

The department has a drown-draft muffle furnace, arranged to use oil or gas for fuel. Temperature as high as 1750 degrees Centigrade may be reached. The temperature is controlled by a pyrometer, and burning is carried on at such a rate that it takes from 30 to 48 hours to complete one firing.

The material to be tested is ground and molded by hand in small metal molds. It is air-dried and then dried in an oven before being fired. Samples are taken at various temperatures, beginning at temperatures at which common brick will burn and extending to temperatures of fire-brick. The whole process is carried on similar to commercial methods of burning brick, and in this way information which will help determine the particular value of the clay is obtained.

After firing, tests are made on the shrinkage, the tensile strength, the hardness and the absorption of the bricks. When promising results are obtained a man is sent out to make further investigations and decide on the feasibility of developing the deposit. Some clays have already proved very good; some are not so valuable. So far nothing has been found which comes up to the standard of fire-brick, but some of the material is suitable for paving brick, and most of the samples are good enough for common building brick. The department expects to find better samples when the work gets further under way. It is the opinion of R. A. McNees, who is in charge of the experimental work that new clay deposits would be very valuable now, because as the country has developed industrially more building material is being needed. The shortage of lumber has increased the demand for clay building material, and the development of manufacturing industries in the state has called for more fire-brick. The discovery of deposits of brick clay in Texas would mean millions of dollars to Texas in decreasing the freight rate and in bringing in new industries, Mr. McNees said.

ENJOYING A TRIP THROUGH THE WEST.

William Conway, the veteran brickmaker of Philadelphia, Pa., together with his wife and two daughters, is making an extended trip through the West, stopping wherever fancy dictates. They left Chicago the latter part of June and Mr. Conway writes that so far the trip has proved a most enjoyable one. He thinks Portland, Ore., would be a great place for an N. B. M. A. convention, especially if held this time of year.

SIL-O-CEL Insulation

prevents heat losses from crowns and walls of kilns, boilers and all types of heated equipment.
Write for Bulletin F54 describing its advantages and application.

CELITE PRODUCTS COMPANY

New York	Cleveland	St. Louis
Philadelphia	Detroit	Los Angeles
Pittsburgh	Chicago	San Francisco

Financial Assistance Given

Clay Product Manufacturers who desire increased output or larger equipment. I have sold many Clay Product Company Bonds, and have a large clientele for this class of securities.

Correspondence Invited

FRANKLIN W. MORGAN
First National Bank Bldg. Chicago, Ill.

Webster's Continuous Kilns (Patented)

The last word in kiln construction and clay products burning.
Suitable for small or large yards.
Practical kilns by practical men.
Can be operated periodic or continuous.
Coal bill practically eliminated.
Continuous down-draft kiln and drier.
Continuous muffle kiln and drier.
Continuous combination down-draft and muffle kiln and steam generator.
Glazing of ceramic wares can be done in the muffle chambers in this kiln from the bisque chambers and no fuel need be used in the glazing process.
No other kiln will do this.

HENRY WEBSTER AND SONS, KILN EXPERTS
628 Lexington Avenue, Newport, Ky.
P. S.--15 Minutes from Union Station or Fountain Square, Cincinnati, Ohio

INVESTIGATE

The Minter System

It burns cleaner than direct fired periodical kilns because the water-smoking is done with clean heat, and the kilns require only about 50% of the fuel usually required in fire holes. The per cent of dust, ashes, etc., is reduced in proportion to the amount of fuel required.

Investigate it from every angle—first cost, labor cost, fuel cost, production cost per 1000 capacity, flexibility, and all the way you will find the Minter System on the job ready to deliver the goods. *Write us for all details.*

FLINT RIVER BRICK CO.
ALBANY, GA.

THE CLAY-WORKER

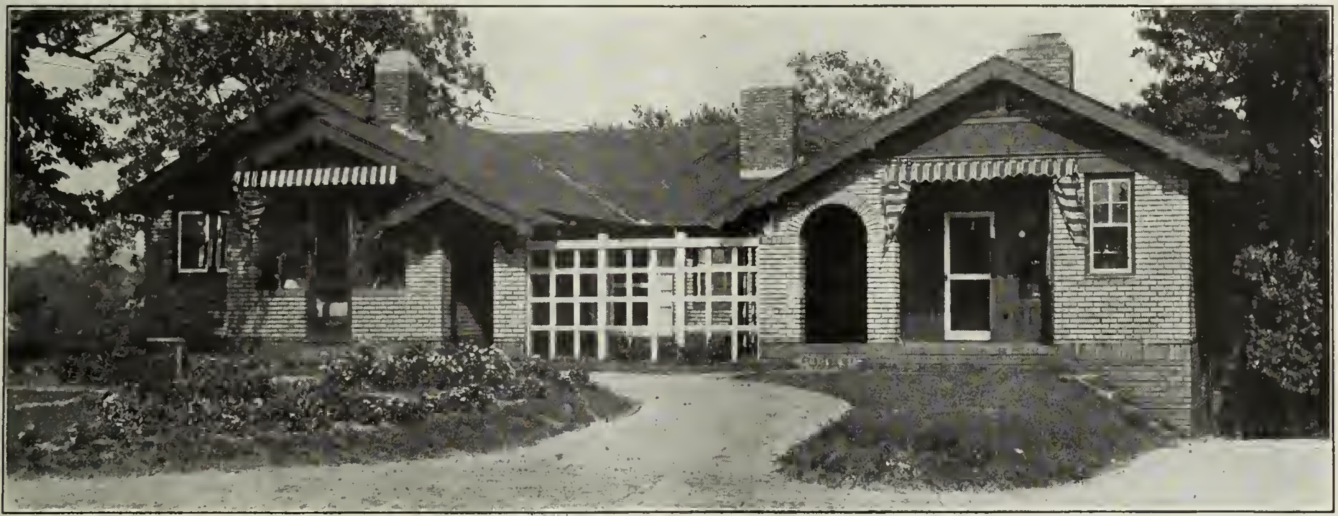
THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 74. INDIANAPOLIS, AUGUST, 1920. No. 2

THE MODERN IDEA: A Brick Bungalow of Unusual Charm, the Home of John W. Sibley, Treasurer of the National Brick Manufacturers' Association, Birmingham, Alabama, Built in Part of Many Different Makes of Brick.

PROVERBIALLY, the shoemaker's children went barefooted and expressing the same idea, we have often heard it said that brickmakers live in frame houses, ofttimes it was true but it is different these days. In olden times, the yesterdays, the old cobbler was a familiar figure in every community. Of recent years he has been replaced by cleverly devised machinery that in a jiffy does his work better than it was done by hand. The shine shop has developed into a shoe repairing emporium, where old shoes are made as good as new while you wait. That is progress, a modern idea.

The whirligig of time brings many changes in every walk of life. Progress and improvement is just as marked in home building as in the arts and the industries. Better standards of living prevail generally and so better homes are required by the humble as well as the rich, homes that afford conveniences that our fathers never dreamed of, homes that are safe, homes that are durable, homes that are beautiful. And all of this is readily obtainable by the humble home-builder of today for the modern brick home meets all these requirements. It is the everlasting home, the home that entails no cost for upkeep, the first cost is the only cost and that now is little more than any other building material.



Rear View of J. W. Sibley's New Brick Bungalow, Birmingham, Ala.

As an illustration, we are pleased to present to the readers of The Clay-Worker an example of the modern brick bungalow, attractive in design, beautiful in setting and in every way inviting; a permanent home. It is the home recently built by John W. Sibley of Birmingham, Ala. Every clayworker in the land knows "Master

John," as his familiars love to call him, for he has served the craft for many years as treasurer of the N. B. M. A. To be exact, he has filled that important office continuously since 1893, during which time, he has won the confidence and esteem of everyone in the industry.

It was not strange therefore that when announcement was made in the columns of The Clay-Worker that he was going to build a brick home, many manufacturers of building brick expressed a desire to furnish some of the brick, just as a reminder to "Master John," and his family, of their long standing friendship. With his usual gracious, happy way, he accepted the offerings and his new home is composed in part, of brick made in many different sections of the country.

In speaking of the mantel and hearth, he said: "I had no idea that such an attractive design could be worked out from so many different colors, textures and types of different manufacture. The base rests upon a soldier course of paving brick from my paving brick friends. Above that are dry press, stiff mud, soft mud, repressed, rough texture, building brick of all sorts, and as varied in color as Joseph's famous coat, but the brick were handled so skillfully that the completed structure is really very attractive."

Living Room With Beautiful Brick Mantel.

The main walls are built of Sibley Flash brick, using dark bluish brown for the base and lighter shades of varying tan in the upper structure. The driveway is paved with brick and the retaining wall is built of paving brick.

The detailed picture of the main entrance shows the high class mason work and the effective use of brick for constructing steps and walk. The living room with its large brick mantel and hearth, is very pleasing in appearance as is also the rear of the chimney in the hallway, back of the living room, which, as stated, was built of souvenir brick sent by brickmaking friends from all over the United States.

Many have expressed the opinion that the rear view of the house, with its circular driveways, lawn and flower garden, is fully as attractive as the front view. "Master John's" bungalow is literally a study in brick and must be seen to fully appreciate the splendid color effects obtained in spite of the fact that the brick used varied greatly in color and texture, for no photograph can bring out the beautiful harmony in color which the mason has wrought in its construction.

THE DEFECTIVE CHIMNEY.

A publication of the National Board of Fire Underwriters calls attention to the fact that statistics compiled show that recently during one month, defective chimneys and flues were responsible for the largest loss in home fires. The figures show that during 1918 property worth $11,985,782 was destroyed by fires resulting from defective chimneys and flues.

Rear of Chimney to Living Room, Composed of Souvenir Brick From All Parts of the United States.

These are the reported losses, and it is estimated that if the unreported were added to this the total average annual loss from this cause would be $16,300,000.

Plainly the clay workers who furnish the best material for chimney and flue building should help in disseminating information which will lead to proper chimney construction. A system of safe construction has been outlined by the Board of Underwriters and has been described and illustrated in these columns heretofore. A copy of the specifications should be kept on file by every manufacturer of brick and flue linings and other material for chimneys and made proper use of to the end that chimneys may be built for safety as well as for permanency.

Now comes the day of seed ticks and politics.

A RED-LETTER DAY ERA FOR COMMON BRICK.

THERE IS PROMISE that the next few years will mark a period which may well be called a red-letter day era for common brick because there are indications that common brick through exploitation and through wider interest generally will gain greater recognition than has ever been accorded it in the past.

There is something impressive too in the thought that common brick may come into its own coincident with the rise of the common people in the affairs of the world, and the twilight of kings and other autocratic rulers. Common brick, like the common people, has been the source of most of the individual greatness as well as the back bone of things generally. It is fitting therefore that in the restoration of the world socially and economically common brick should play an important part in the structural world as well as the common people play a dominant part in social and governmental recognition and development. Also there is prideful thought for every American in the fact that it is this great country of ours which is leading the van and playing the dominant role both in ideas for government and in the development of common brick into an article of greater importance and wider recognition in the structural world.

Main Entrance to the Sibley Bungalow. Note the Brick Steps and Walk.

There has without question been more conspicuous development in brick making in this country than in any other country in the world, both in the quality of the product and in machines and mechanical devices for carrying on the work. Also there has gone with it remarkable development in scientific research and in promoting special lines of clay working which have grown into prominence rapidly.

It is common brick we are more specifically concerned with here now than the many other branches of development in the clay working industry. And it is common brick which merits some special attention now because of the opportunities for development and the efforts being put forward to promote a wider knowledge of and interest in common brick and its possibilities. Common brick has had a remarkable career in this country, and here as elsewhere it has been the mother product out of which have come many other things in the clay products line, including face brick, fancy brick, enameled brick, hollow tile, and glazed and enameled tile. Meantime common brick has developed a crude hand product burned and baked haphazard and often under done in the pioneer days, to a hard burned product with much greater resisting quality and durability as well as much more beauty of color and dependability as to shape and size.

Readers of the Clay-Worker have had spread before them at various times stories of the ups and downs of the common brick, some optimistic and some pessimistic. There have been periods of high tide where the quantity of product reported was much greater than others, and periods of low tide where the pessimist saw in the decline the passing of common brick as a big item in building operations. There has been the passing out of many small hand yards and a concentrating into larger industries for the sake of economy and better methods in manufacturing, and many interesting shifts and changes taking place, some of which have been interpreted in various ways depending upon whether those reviewing the industry were feeling optimistic or pessimistic, or were striving to create some special impression to further some idea being promoted.

John W. Sibley, Treasurer N. B. M. A., Birmingham, Ala.

The fact of the matter is, the clay working industry has, broadly speaking, made steady progress in this country during all the period of which we have any definite record. Moreover, in reviewing this progress and its relation to the common brick industry, which at times has seemed to be "skidding", back firing or something, we must bear in mind that out of the common brick industry there come also other clay products which have entered into competition with, or supplemented the use of common brick, which ever way you prefer to state it. These include, as stated above, practically all the structural items, those different items of face brick, hollow tile, and terra cotta which merely represent individual products of distinction which came directly out of the mother industry of common brick making. Of that there is not much room for argument. The chances for question and argument is in what the future may bring, what part each of the various lines of clay products offered for structural purposes may play in the future. Is the comparative quantity of common brick to decline or increase? And if so will it be at the expense or the advantage of some other particular item in clay products?

To put it specifically, will the rise of common brick as a feature in architecture, mean a corresponding decline of face brick? Will a more active promotion of common brick for wall construction interfere with the progress of hollow tile for the same purpose?

Right here is a good time and place to insert some of the regular Clay-Worker philosophy, that is—first, that there is room for active exploitation and much greater development in all these items. Second, this exploitation and development should take on the form of friendly rivalry to stimulate progress, but should not under any circumstances come to the point of cut-throat competition or factional strife.

Common brick has a wonderful opportunity before it today and there are indications that the industry is realizing this and will make reasonable effort to develop these opportunities into real business, which will mean a larger use of common brick in building operation both for plain walls and for face work and architectural features of beauty.

We have never yet realized the full measure of opportunities for architectural beauty in plain common brick. This seems odd, too, in view of the fact that many of the prideful offerings of today in face brick were originated in somewhat accidental form from common brick. Several specific cases could be recited where architects have gone to the brick plant and have found brick piled aside which had been over-burned or discolored in a manner that caused the brick maker to feel they were impaired as to value and for this reason were laid aside. The architect with the vision and the eye for beauty has recognized the possibilities of these and has developed some striking features of architectural beauty from unintentional creations in the form of common brick, which after once being recognized were exploited as fancy face brick.

This is a matter of comparatively recent history fairly well known to members of the trade. But with numerous examples of this kind as reminders the industry as a whole has been slow to realize the architectural beauty possibilities of the common brick product. There is some awakening to it now, and it is this awakening perhaps as much as anything else which will contribute to the marking of the next few years as a sort of red-letter day period, in the history of the common brick industry in this country.

Let us not make the mistake here now of thinking that the day has already arrived and that all the necessary work has been done and the balance will take care of itself. The fact of the matter is, the real day of progress is just beginning and how big that day will be in the common brick industry depends directly on how the interest is kept up and how we carry on generally.

It is an occasion which calls for vision and foresight, and the expenditure of energy and money. For developing vision and the widest scope of beauty possibilities the industry should strive to interest architects and get them thinking about ideas for architectural beauty features. The architect is trained in this line of thought and development and if the interest of the architects of the country can be kept alive and directed toward common brick there is practically no limit to the possibilities of interesting development which may take place in the next few years.

That is one side of the matter, developing the beauty possibilities in architecture for face work. Meantime there are a number of other lines of interest which merit attention. There is the more material question of plain wall construction, there is the problem of interesting the general public and selling them on it. No brick has a better market for general structural purposes than the less durable material which has been so widely used in the past.

Perhaps the big need in the development of common brick right now is for salesmanship. What is meant here is salesmenship in its broadest terms, which includes selling the public, interesting dealers, and providing channels of trade for distribution while promoting an interest which will develop trade.

Advertising in the proper magazines and in trade papers helps some and some good work of this kind is already under way. This will help awaken interest, but the interest must be kept alive and reduced to some specific form which will lead to desire.

Here is where pictures, plans and plan books come in as perhaps the best agencies to reach the public at large especially for home building. This is the great agency that has helped the lumber people commercialize the home idea and market many millions of feet of lumber for home building. It is an idea that has been treated of in these columns several times recently, and that should be kept in mind continually because it is through the use of some means of visualizing the completed structure that the public can be sold on its building material.

The public in the form of the prospective builder is not keenly interested in items of building material as such, that is brick, lumber, and hollow tile. It is the product made from these that interest him and arouses desire. The builder must be sold on the completed structure and its appearance rather than the appearance of building material itself. That is why pictures, pictorial literature generally and pictures and plans specifically play such an important part in the marketing of building material. Even roofing men recognize this and use pictures of completed homes simply to center interest in and to sell the public on a roofing product. Plainly therefore this is a big field of opportunities in salesmanship for the common brick industry. The question is, how it may best be handled and the field properly covered.

If we can keep the interest in common brick development alive, time and effort will solve the questions involved here, and The Clay-Worker expects to contribute its share by suggestions from time to time for lines of trade development that look promising and will stand the test of logical analysis. Meantime let us have an awakening in the clay working industry in itself to the fact that we have before us opportunities which can easily be made into a red-letter day in the history of the common brick industry.

LIME PRODUCTION IN 1919.

A preliminary report of the U. S. Geological Survey shows that the lime production for 1919 was 2,976,000 short tons, as compared with 3,206,016 tons in 1918, and 4,073,433 tons in 1917.

It is evident that the loss in demand came from the chemical and metal industries because the report indicates that in the building trade the use of lime was greater in 1919 than it had been previously. In other words, the outlook continues fine for the use of lime in building operations, but there has been some curtailment in the requirements for special industries which were stimulated by war conditions.

We are told that the total world debt now amounts to 265 billion dollars, but at that each fellow's share is only $150, and we don't have to pay it all at once, so it's not so staggering as the total figures would make it seem.

NOTED TERRA COTTA MANUFACTURER DIES AT FOURTH LAKE, N. Y.

KARL MATHIASEN, the well known terra cotta manufacturer, of Keyport, N. Y., died Saturday, July 31, at his summer home, Camp Danmark, Fourth Lake, in the Adironack Mountains, after having suffered ill health for more than a year. Mr. Mathiasen was in his sixtieth year and leaves a widow.

Karl Mathiasen, the oldest son of Anders C. Mathiasen and Kjersten Maris Mathiasen, was born at Thisted, Jutland, Denmark, on March 18th, 1860. In the year 1873, his parents decided that greater opportunity awaited the growing family in the western farming district of the United States and shortly thereafter young Karl, then in his thirteenth year arrived with his father in New York. By a seeming misfortune which befell them their small means were suddenly depleted and the carefully laid plans to go west had to be abandoned in favor of Perth Amboy then a very small city, but where the boy found employment at the King Cork Works, which at that time was one of the few industries of this community.

The Late Karl Mathiasen.

Within a short time, the remainder of the family arrived and a home established, the Mathiasen family being among the earliest Danish settlers of this locality. The boy stayed but a short time at the King Cork Works as an opportunity was offered with the old A. Hall Pottery which was located on the present site of the Atlantic Terra Cotta Co. plant. When A. Hall & Sons started to manufacture terra cotta he went with them in the pressing department and later was employed as foreman with the Boston Terra Cotta Works and at Ravenswood, L. I.

In 1887, young Mathiasen embarked in the manufacture of architectual terra cotta with his brother-in-law, Otto E. Hansen, deceased, under the firm name of Mathiasen & Hansen. The factory was erected on a small plot of ground about seventy-five by a hundred feet on Catherine street of Perth Amboy. The firm went through all the difficulties which are linked with the lack of facilities and capital and further had to face the loss of their entire factory by fire, a full test of measure the tenacity and stoutness of heart of the young manufacturer.

These misfortunes, however, seemed to mark the turning of the tide and the New Jersey Terra Cotta Company was incorporated with Karl Mathiasen as president. Other members of his and Mrs. Mathiasen's immediate family entered the company in its long career of growth and uninterrupted success.

Mr. Mathiasen was a man of high ideals and of stout Americanism, and in his quiet, unobtrusive way, he rendered such service in international relations that, in recognition, he was decorated in 1910 by the King of Denmark with the order of Knights of Danebrog.

At the time of his death he was president of the New Jersey Terra Cotta Company, of Perth Amboy; Matawan Tile Co., of Matawan, and a director of the Royal Copenhagen Porcelain Co., of New Denmark; a member of the Royal Danish Yacht Club, of Copenhagen, Denmark; and of the Keyport and Raritan Yacht Club, of Perth Amboy, besides having many interests of a charitable nature.

The funeral services were held on August 4th from St. Stephan's Danish Lutheran Church at Perth Amboy, N. J., of which he was a member and was largely attended by old associates and friends in the clay industry.

THE PROGRESS OF BUILDING.

Statistical reports furnished by the American Contractors and by the F. W. Dodge Company give some interesting features of the progress of building during 1920.

The graphic chart of the American Contractors shows that in the early season building started off with a rush, attaining a high peak in permits during April. Then during May there was a decided slump, but even this, at its low point, stood above the six-year average in total value, and probably equal to it in total quantity of work.

The slump was perhaps originally induced by the sharp advance in the cost of building operations, and the shortage of help. The slump brought some easement in some lines of material, but about the time it looked like building operations would be gaining headway again there came the tightening down in the money situation, which has served to hold many building projects in check.

We have now a period of somewhat better supply of material and more help available as encouraging factors. On the other hand the tightening down in money serves to put a check especially upon investment and speculative building. There are numerous big undertakings of a business nature and there is a healthy disposition to build homes, all of which will probably keep enough building going on to use up all of the material available during the fall season.

Taking the territory east of the Missouri and north of the Ohio river by classes of building, data compiled by the F. W. Dodge Company shows that residential contracts lead in point of total value, followed by public works and public utilities and industrial building in the order named. This indicates a healthy condition, because it is residential and industrial buildings which indicate home-making and industrial progress.

While figures are not available to show it, there is evidence that a larger percentage than usual of clay products and other hard building material is entering the work, and this means the use of more brick and tile comparatively for the volume of work done. It is an indication that, taking the country over, there will be no surplus at the end of the season, but a ready market for practically all of the brick and tile that can be produced. The main hampering factor is lack of transportation rather than lack of demand.

In your dealings as in your product you must give a full and fair value if you expect to thrive long.

THE STORAGE AND HANDLING OF RAW CLAYS.*

(By T. W. Garve)

Purpose of Storage.

We have pointed out in a previous paper[1] that "raw clays are stored for the purpose of sufficient supply during winter or during bad weather; to help over any breakdown at the mine or bank; to secure a better and more uniform mixture; and to improve the working conditions of the clay and the quality of the ware.

"The clay storage equipment should be an independent feature of the plant that can be in use continuously or intermittently, as conditions require, so that all unnecessary rehandling be avoided. It should face the clay bank, and later extension should be possible."

Crushing.

Shales are often crushed before being placed in storage and we have shown such layouts in our illustrations. This, however, may not have any bearing upon the system of storing and handling the clay or shale, hence the methods of storage can be considered by themselves.

If the shale is won by steam shovel there are frequently large pieces to go into the cars, and the sooner they are crushed the better for further handling. Where weathering or mixing are desirable or essential there will naturally be better results if the crushing is done ahead of the storing.

While it is recommendable to crush shales before their storage, it may be difficult to do so in certain cases, for instance, where the factory is far from the storage intake and where no electric power is available. This difficulty might be overcome in certain installations by placing the crusher or any other grinding or preparing machinery at the factory end of the storage building where direct drives from the line shaft can be had, and conveying the crushed material backward to storage. In this way the direct use of unstored clay is easily accomplished.

Weathering.

Storing may have but little to do with weathering; and yet, to a certain extent, the process of handling and storing will more or less improve the working conditions of the clay and so the quality of the ware. Considering shales, the pre-grinding will be a factor in favor of the above claim.

It can readily be seen that by the methods of storing and handling we are opening up the raw materials and expose them more freely to the air just as we improve the soil by plowing it. A lot of air is being entrapped within the lumps or particles of shale or clay as they roll down over the storage pile to be rebuilt and repacked.

Mixing.

While there seems to be no real systematic mixing done by using a storage shed and dumping the clay down on piles, the result is often sufficient for practical purposes.

The storage alone would not be a sufficient means of mixing where it is essential to get an average of the clay bank from top to bottom and from end to end, and it will be necessary in such cases to get a mixture at the pit and work the clay or shale bank accordingly, by a clay digger, or shale planer, or hand method, or any other suitable manner. In any case, the material dumped will spread out in thin sheets over the storage pile, the voids being filled by the new layer, etc. This relaying of the clay bank so to speak, will unquestionably have a mixing effect to a degree determined by the manner of manipulation.

For mixing lengthways, it is an easy matter to have the clay car dump at different places along the shed or to set the tripper ahead at times or to use a continuously moving tripper which discharges along the storage while traveling back and forth. If there is a side discharge from car or belt, the sides can be altered at certain intervals. A certain amount of mixing again is being done by drawing from storage. For perfect mixing or blending of different clays a method as shown in figure 10 may be used. A number of modifications can be worked out on this principle to suit the particular problem.

Clay to Storage.

The raw material can be taken to storage direct from a dump car, which can have a bottom, side or end discharge, or the car may be emptied by a dumping device. Since a dumping device would be a stationary affair, the dump car is to be preferred since it will permit of delivery at any place along storage. We can accomplish the same thing by the installation of conveyors of various types or, if the storage can be high without extending over a large area, a high elevator with a swivel spout, or distributing spouts might be used, or a rotating elevator. For more specific information see Conveying and Storage Systems.

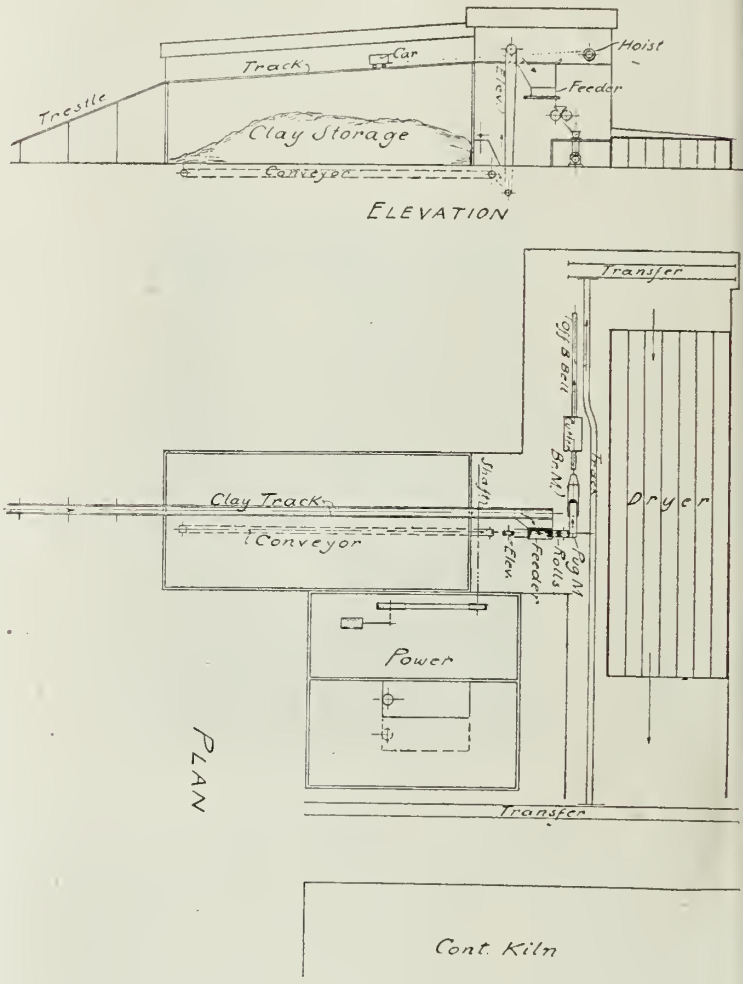


Figure 1.

Clay from Storage.

From storage the material can be carried out either by cars or suitable conveyors. For feeding the material to these, we can use removable boards or spouts or feeders of various types, as reciprocating feeders, disc feeders, or screw feeders. If boards are used, an opening, closed with removable boards, should be left at one end of storage building above the belt to enable the start of emptying a completely filled storage. For more specific information see Conveying and Storage Systems.

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[1] "The Designing of Factory Layouts for the Clay Industries," J. Am. Ceram. Soc., 2, p. 194.

Belt Conveyors.

In regard to belt conveyors, the troughing type is used to quite some extent in clay plants, since it does not seem to spill the clay as the flat conveyor does and has greater capacity. However, the flat conveyor has its advantages, especially if used wide enough to prevent spilling of material. While a troughing conveyor will have about 60 per cent. more capacity than a flat conveyor of the same belt, the life of a flat conveyor is considerably longer, perhaps half as long again.

The belt should be carried on idlers and not on boards. For a troughing conveyor, all idlers should be cylindrical and the side idlers should be set at an angle to form the trough of the belt, but no conical idlers should be used since their circumferential speed varies, causing rubbing and wear on the belt and shortening its life. Large head and tail pulleys also will tend to lengthen the life of the belt. The belt speed should be around 125 feet per minute.

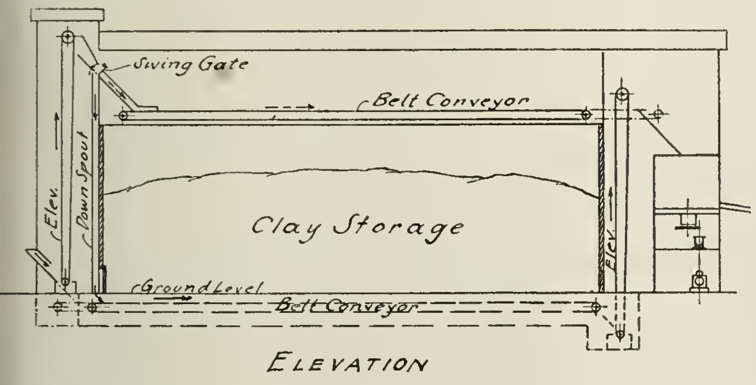


Figure 2.

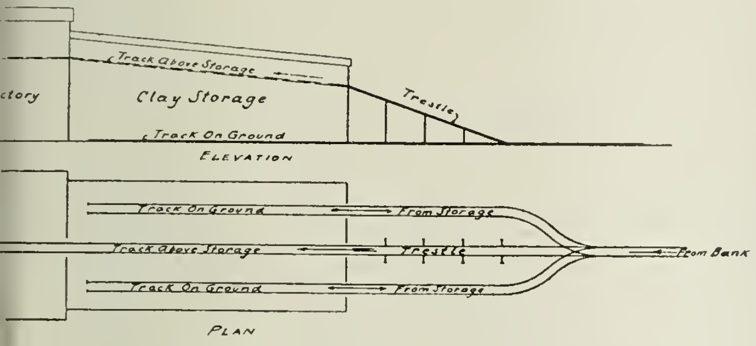


Figure 3.

Conveying and Storage Systems.

In the accompanying illustrations we have a number of different systems for storing and handling raw clays or shales. Each has its merits and any preference would depend upon conditions, as capacity and location of plant, length of season, kind and quality of ware, kind of bank equipment and distance, character of material, kind of power equipment and its size, arrangement of factory, money available, and expenditure justified.

In figure 1 we have sketched a plant for making brick or tile to bring out again the independence as well as the relationship of the clay storage building with the rest of the factory. The car above the storage can discharge its contents at any place of storage or direct into the screw feeder for the factory. For using stored clay, the underground belt conveyor will be operated for charging the feeder mentioned. By means of movable boards above the conveyor duct, beginning from one end of storage, the material will slide down to the conveyor belt. This requires one man. This is not an expensive installation and will do well for a small or medium sized plant. It allows for extension by moving out the trestle.

A somewhat different system is illustrated in figure 2 where an elevator, receiving the raw or crushed material, delivers it through a chute either to the belt conveyor above storage or direct to the underground belt conveyor for direct use in the factory. The stored material can be dropped to the underground conveyor or be fed into the elevator at the factory at whatever height the storage level happens to be.

There are two modifications or improvements of this arrangement for the use of unstored clay, by either extending the underground belt conveyor to the left to receive the material direct without elevating it, or by extending the top belt conveyor to the right into the factory. Either scheme would eliminate one elevator for using unstored clay. These extensions are shown in dot and dash on the drawing.

Another method is shown in figure 3 where no conveying machinery is used and all transferring is done by cars. The stored clay is taken or scraped down from storage pile and shoveled into cars, and these are then returned to the front of the trestle to be pulled up by winding drum over the storage pile to the factory over the same track from which the clay is dumped into storage.

Figure 4 shows a somewhat different method for getting the clay from storage. The clay storage is divided into two piles at each side of the transfer track. The loading tracks are leading off to each side under the clay pile, and the clay is gradually worked down towards the end of each pile exposing more track as the emptying of storage proceeds. The inclined track to the factory is located to one side of the storage building and leads off from the transfer track.

In figures 5 and 6 we have two continuous systems for filling and emptying the storage. In the first system we have a continuous bucket conveyor or peck carrier, and in the second system the trick is being done by means of a continuous belt conveyor. They allow for carrying the material to storage or to the grinding plant by one continuous conveyor, operated from one drive. These installations are more expensive than the previous ones and require more power, but they are undoubtedly flexible and can be used to advantage in plants of large capacity or with large storage.

The elevator in the belt conveyor system can deliver the material direct to the factory, being right angle to storage, by turning the spout 90 degrees. The stored clay is delivered to the elevator at the opposite side of elevator boot.

A tripper, as shown, running on rails, is perhaps the best way for discharging a belt conveyor at a desired place, even though a tripper will add to the cost of the installation. Sometimes a scraper is used above the belt. A scraper will not clean the belt completely and some material will remain on the belt to be discharged at the end. The rubbing effect of the material on the belt behind the scraper will result in quite some wear on the belt.

Sometimes a drag conveyor is used as shown in figure 7 and the clay is dumped through openings in the bottom or floor, and sliding gates are pulled out wherever the storage needs to be filled. Such a conveyor, single or continuous, can be used above and below storage.

Figure 8 represents a commendable system, initiated and fully described by Riddle in *Trans. Am. Ceram. Soc.*, Vol. XIX. The connecting link here between the dump pile and factory is a clamshell bucket attached to a crane. It allows piling at random with good mixing and can rightly claim flexibility.

In figure 9 we have a somewhat different system suggesting round storage bins built of reinforced concrete or steel, being filled from a swivel spout of an elevator located in the center. Disc feeders at the bottom and one belt conveyor are to deliver the stored clays to the factory. This system allows an excellent possibility for blending clays in proper and accurate proportions, and besides can be built within a small space. It can also be extended by adding more bins on the inside.

Returning Cars.

In order to return the car or cars from above storage, the track is sometimes sloped so that the cars including cable can return by gravity as shown in figure 3. Such a slope should be about one foot per 14 feet, or 7 per cent., but depends upon the conditions of the equipment.

Another way of returning cars automatically is to use a retriever as shown in figure 10. The extending loop near the upper end of the incline between rails is caught by a hook attached to the lower part of the car while being pulled up by the hoist. The car is pulled back by counterweights.

The counterweight shaft is connected with reducing gears to a cabledrum shaft which unwinds the cable attached to the car, pulling it back. The loop returns to its position between the rails when the car again passes this place on the upper incline on the return trip, the trip then being continued by gravity down the incline. Instead of using counterweights, a second winding drum may be used for pulling the car back.

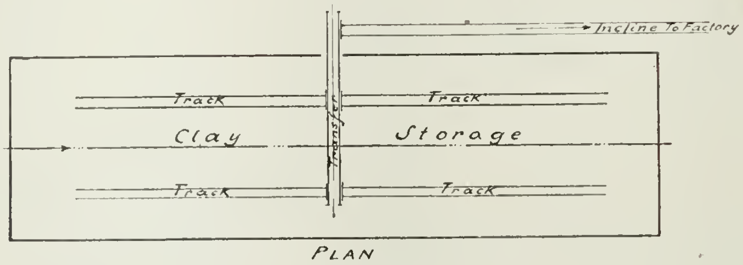


Figure 4.

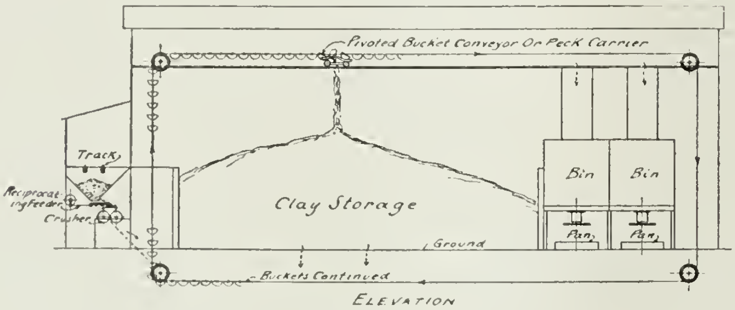


Figure 5.

Sheds and Buildings.

The details must be worked out in every case for every plant, and it is not the place here to go into an elaborate discussion of them, and besides a number of them comprise the standards of an architect or engineer; however, in order to properly appreciate our storage problems and to allow comparison, it is necessary to throw some light upon some details of construction.

Before a clay storage shed of proper proportions can be designed, the angle of repose for the material in question should first be determined by experiment.

In figure 11 we have a cross section through a clay storage shed with a double track. It is put up of light timber and no rafters are used, instead the roof boards are placed at such an angle (at least 45 degrees), as to be self-supporting. It is a cheap construction, but has the disadvantage of much timber work within the clay pile with a tendency to breaking, due to unavoidable one-sided loading by clay. At the bottom the clay will roll out and form its own retaining wall. This shed requires about 7,000 board feet of timber for 1,000 tons storage capacity and is cheaper than the other sheds mentioned later, mainly on account of the double track arrangement.

Figure 12 represents a single track shed of inexpensive and simple construction, well suitable for a small plant. The shed is, so to speak, built around the clay pile and little space is wasted. There are the self-supporting roof boards, but a heavier construction for the trestle.

For larger storage and where the angle of repose of the material is less steep, as, for instance, for coarse or perfectly dry material, a storage building as shown in figure 13 may be erected. The roof stringers are trussed, and they are resting on a concrete retaining wall at one end and on the track cap at the other end. Such a wide building requires, for economic emptying, two underground tunnels with either conveyors or cars. To avoid the underground tunnels, the conveyor or car track can be placed above ground. This requires an overhead floor of heavy construction to carry the weight of the clay, but such buildings can be worked out and are in existence.

Where the clay storage building does not need to be very long, the grinding room or machinery building can simply be extended; and the clay track be placed within the roof truss. Such a construction is shown in figure 14. The truss may be built of steel, as shown, or of suitable timber and rods.

There is no question that buildings of a great variety of types can be designed and constructed, however, we can point out here but the most characteristic and most widely used types.

Retaining Walls.

The retaining wall is one of the most important elements in clay storage buildings, though we have shown cheaper types which did not have such walls. We can build such walls of timber; plain concrete, reinforced concrete, steel, brick, or any combination of them. The following drawings of retaining walls are self-explanatory and hardly anything needs to be added.

In figure 15 we have three representatives of frame retaining walls. In figure 16 we have plain concrete and reinforced concrete walls. This is not the place to go into a discussion of reinforced concrete design, which is a study by itself. We merely wish to mention that the steel bar reinforcements are placed where the wall is under tension. Figure 17 gives a retaining wall, using concrete, steel and timber. It is a strong construction and can be carried high. Figure 18 offers a suggestion for a wall built of steel and brick.

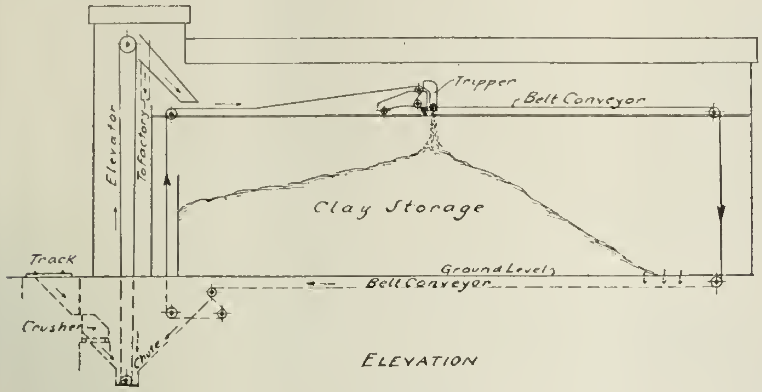
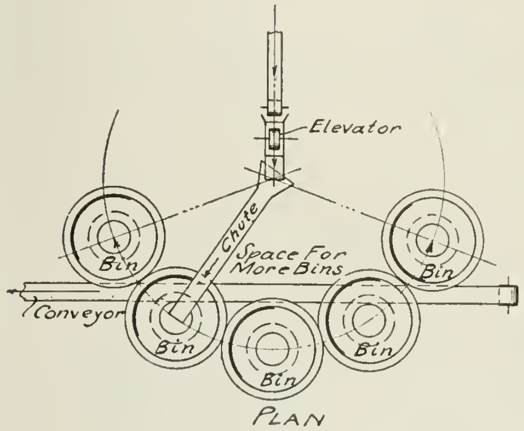


Figure 6.



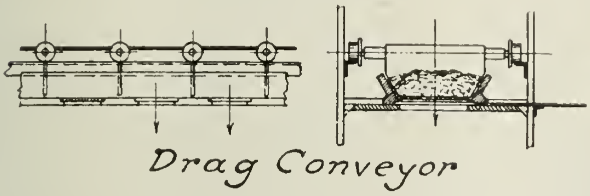


Figure 7.

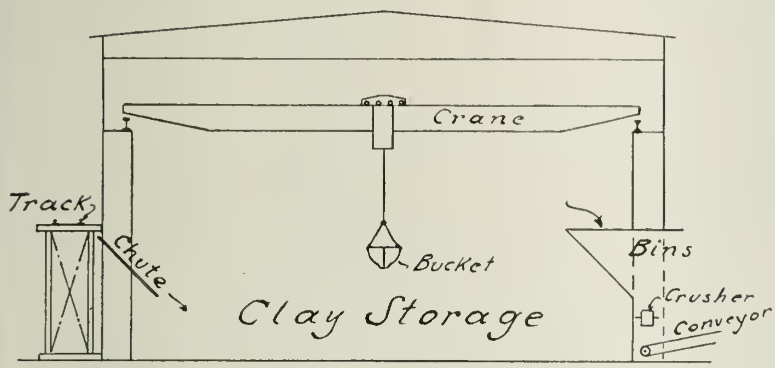


Figure 8.

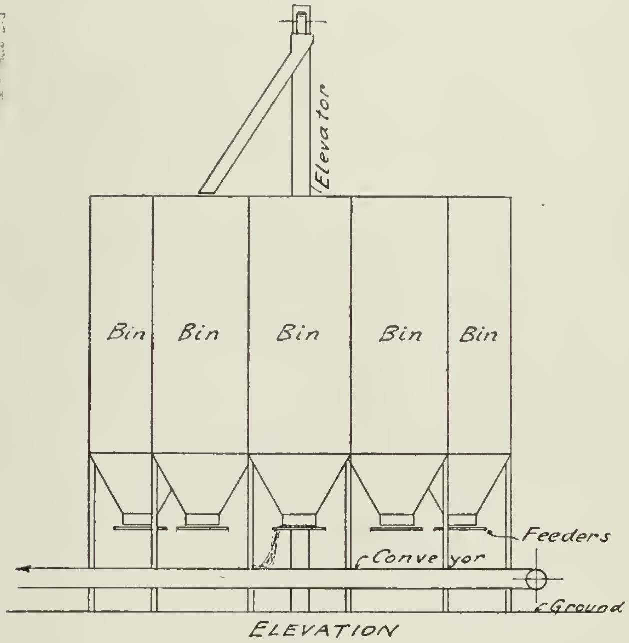


Figure 9.

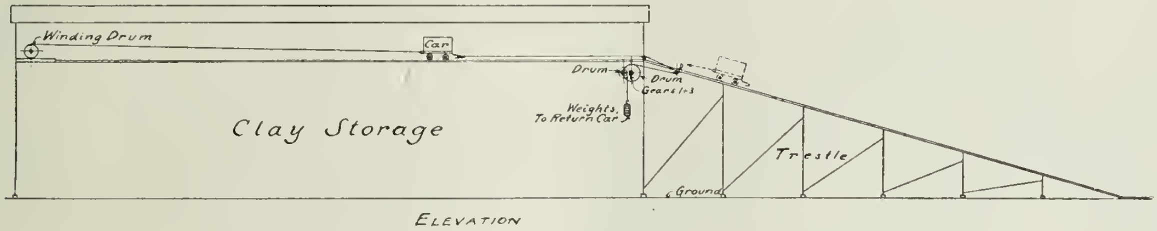


Figure 10.

Retaining walls should be calculated to do the work and to be safe as the rest of the structure. While all these calculations are problems for the architect or engineer for the particular case, we wish to add a few words regarding the theory of retaining walls. There is a literature on retaining walls, and anyone interested can supply himself with much theoretical data.

While there is a great variety of shapes of retaining walls for the many different purposes, we will assume that for the clay worker it dissolves itself into a wall with a straight and vertical back, a battered front, and a toe, as shown in figure 19.

The wall must be strong enough in itself to prevent cracking or failure, it must be safe against overturning and safe

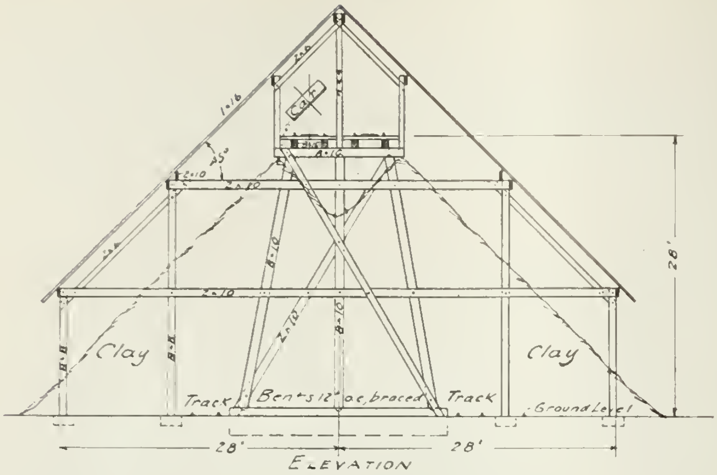


Figure 11.

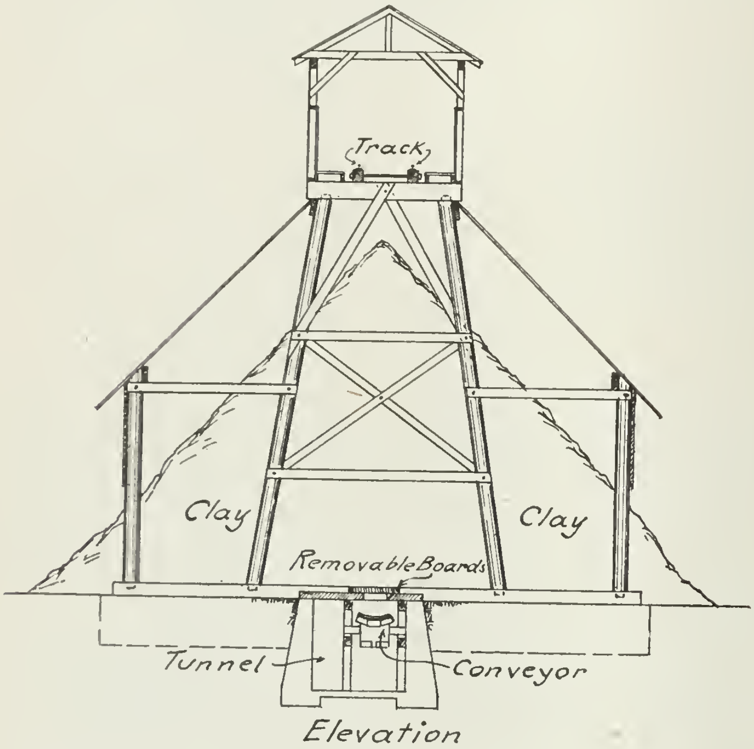


Figure 12.

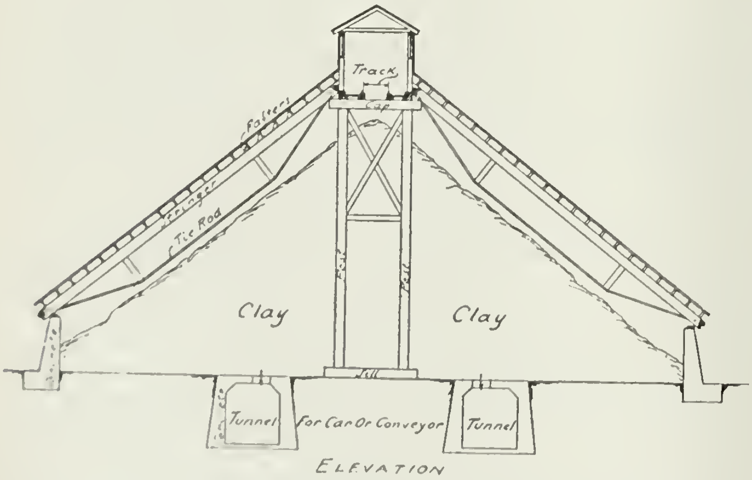


Figure 13.

against sliding. The clay behind the wall, tending to slide on itself and the surcharge, will tend to overturn it. The weight of the wall and footing or toe will be the resisting factors. The farther back we can keep the center of gravity of the wall the less it will tend to overturn. The soil pressure must be investigated, and if it is greater under the toe than the allowable unit pressure the base must be increased in area by extending the toe forward.

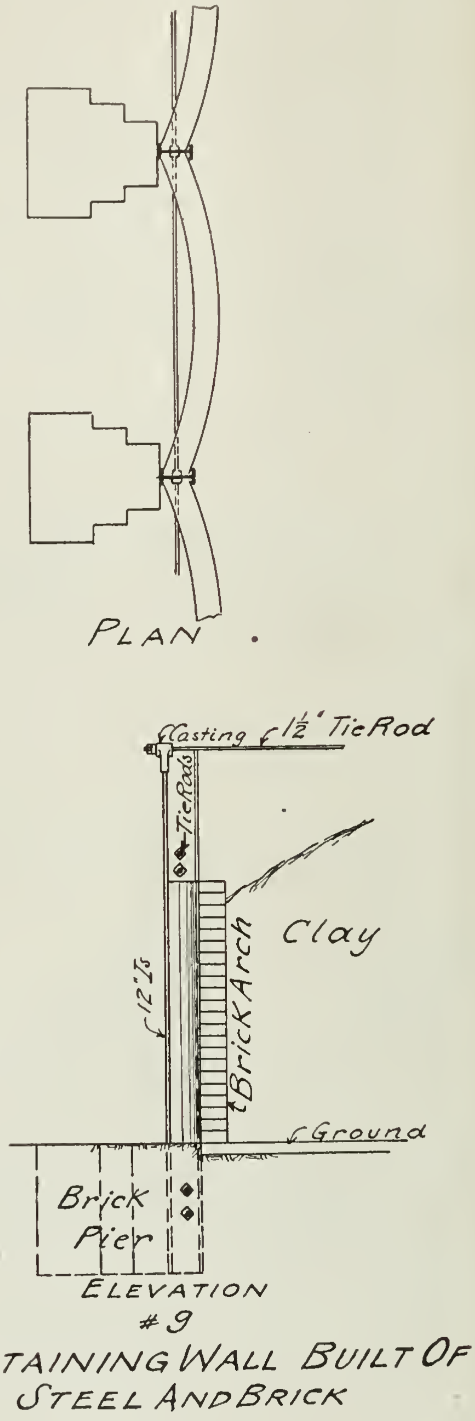
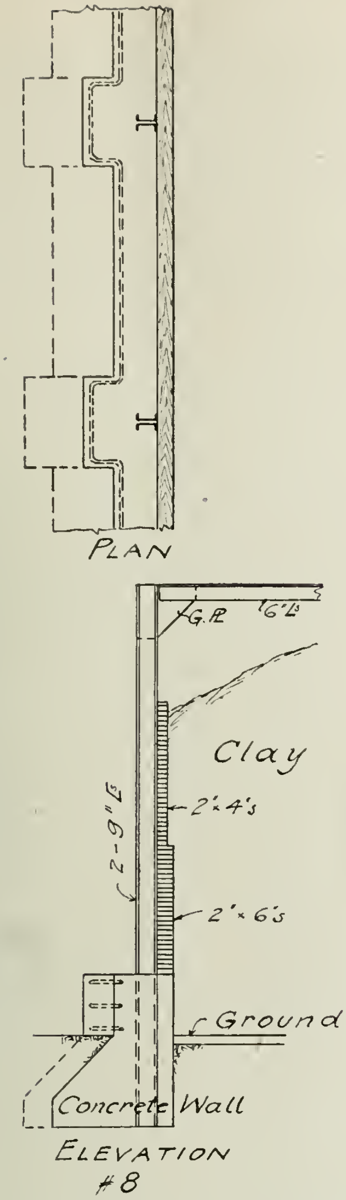


Figure 18.

There are a number of theories on the design of retaining walls; but assumptions have to be made here, and many engineers are guided by practical ex-



RETAINING WALL BUILT OF CONCRETE, STEEL, AND TIMBER

Figure 17.

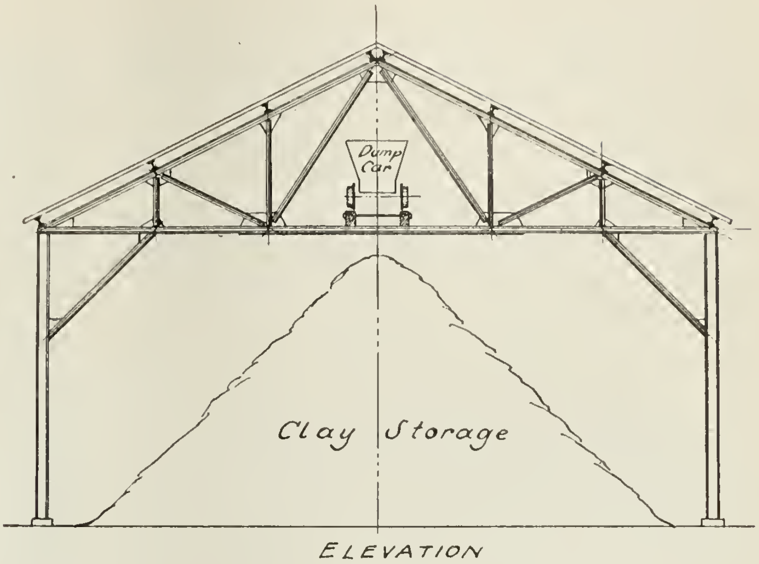
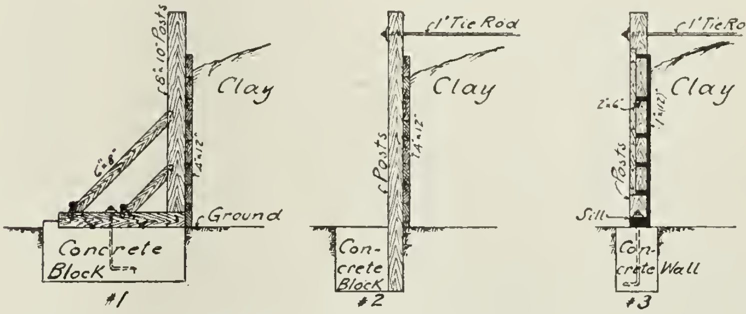
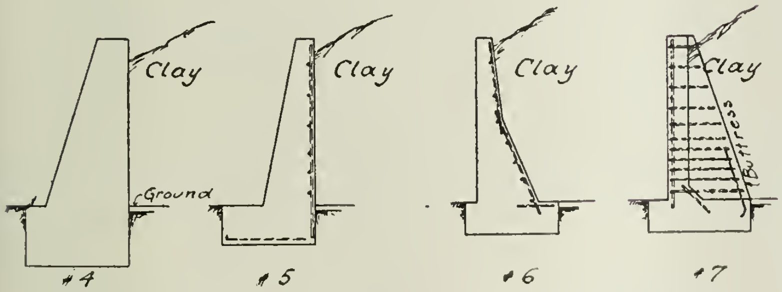


Figure 14.



FRAME RETAINING WALLS

Figure 15.



PLAIN AND REINFORCED CONCRETE RETAINING WALLS

Figure 16.

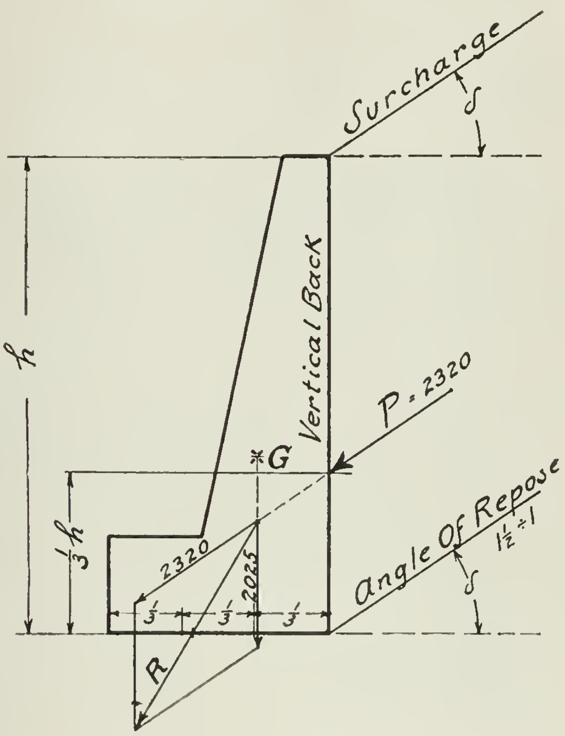


Figure 19.

perience rather than by theoretical considerations. However, all the earth pressure theories assume that the surface of rupture behind the wall is a plane, that the point of resultant pressure is at one-third the height of the wall from the bottom, and that the resultant makes a definite angle with the horizontal.

While there are, as mentioned, a number of theories, we wish to give here but a short and convenient method of checking the safety of a wall with a vertical back against overturning. The angles of repose and of the surcharge are assumed to be the same. The resultant earth pressure P then is parallel to these angles. For this condition Rankine's formula receives the simple expression:

$$P = \frac{1}{2} w h^2 \cos \delta$$

where w is the weight of the filling per cubic foot
h is the vertical height of the wall in feet
δ is the angle of repose and surcharge.

In our case:

$$P = \frac{1}{2} \times 100 \times 7.5 \times 0.83$$

$$= 2320$$

This represents the resultant earth pressure behind the wall for the length of one foot.

The weight of the wall per foot figures 2025 pounds.

The resultant R of these two forces should fall within the middle third of the base, which we find to be the case.

AMERICAN PEAT SOCIETY TO MEET AT MADISON, WIS., SEPT. 2ND, 3RD AND 4TH.

The thirteenth annual meeting of the American Peat Society will be held in Madison, Wis., Sept. 2nd, 3rd and 4th, with headquarters at the Park Hotel. Secretary Charles Knap, 17 Battery Place, New York City, writes that a good program is in course of preparation, including papers showing that peat is a potent factor in industrial and agricultural interests. It is planned to have excursions to peat lands in the vicinity of Madison. For further particulars, address the secretary.

CENSUS MAKES PRELIMINARY SURVEY OF BRICK PLANT EMPLOYES.

A PRELIMINARY survey of employes in the brick manufacturing industry by the United States Census authorities has just been completed, the results of which are now available. Thirty-five establishments in various parts of the country were selected as the basis of the census figures, with the following results:

RAILWAY RATES AND SERVICES.

THE SHIPPING PUBLIC has been nursing two grievances against the railroads and railway employees. One is high rates, and the other is poor service.

Now the rates have been made higher to help the railroads recoup and to help pay higher wages to the employees, and the sum total of these increases runs into big figures, passing the billion mark, and there is an interesting question of how the public is going to take it. The answer to this question will depend considerably upon whether the railroad managers and workmen in charge of operations give us improved service and furnish some relief from congestion and shortage in shipping facilities.

Men are busy with pencils reducing this big aggregate sum to the small fractions of additional expenses which will be put upon the individuals of the country, and this serves to mollify the temper of the public some. That is, it helps some to turn attention from the big figures of the aggregate to the small amount of additional cost which will be put upon a given item for example in the final analysis. And this is perhaps as it should be, because the public is in a temper that might lead to drastic and unwise action.

The whole situation, however, hinges largely upon the railway men, including everyone, from managers down to switch tenders, track men and repair men. If they will buckle down to and give us our money's worth, will earn their increase by more efficient service, the cost of the service will soon be forgotten in the satisfaction of keeping things moving as they should move and being relieved from the nightmare of car shortage and traffic congestion. In short, it is up to the railway boys—they will have to make good or the public will soon be making effective protest.

A SALMEN SUMMING UP OF PRICE AVERAGES.

The Salmen Brick & Lumber Co., with manufacturing plants at Slidell, and executive and distributing offices at New Orleans, La., has compiled and tabulated information on brick prices from seventy-five leading cities of the country during the first six months of 1920. These figures take in a wide range of territory, from Boston to lower Texas, and they show a general average price of $22.32 for last January, with a gradual increase, month by month, until June, when the average had reached a total of $24.58. At New Orleans, the main distribution center of the Salmens, the price range listed runs from $19.11 in January to $22.50 in June, plainly illustrating that there has not been any gouging or profiteering in brick prices in that territory. The highest price found on the June list is $44.00, for Miami, Fla., and next to that comes Des Moines, Iowa, with June prices of $34.50, while the lowest price showing was $13.50 for Los Angeles, Calif. Next in lowness comes Evansville, Ind., and Chicago, Ill., each with an average price of $16.00.

			Average hours actually worked						Average earnings actually made			
Sex and occupation	Number of establishments.	Number of employes.	In weekly pay period.	In biweekly or semi-monthly pay period.	Per week day.	Per week.	Full-time hours per week.	Per cent of full time worked.	In weekly pay period.	In biweekly or semi-monthly pay period.	Per hour.	Per week.
Males.												
Brick machine tenders......	34	41	52.8	114.6	8.9	53.4	54.2	99	$24.74	$55.71	$0.484	$25.62
Grinding machine tenders...	33	63	48.4	105.2	8.2	49.2	53.2	92	19.67	48.91	.438	21.18
Kiln firemen	34	160	69.5	135.8	11.0	66.0	73.5	90	27.65	55.52	.423	27.06
Kiln setters	35	198	42.1	88.6	7.0	42.0	53.8	78	22.46	52.37	.558	23.21
Laborers	35	844	48.9	90.5	7.7	46.2	53.7	86	17.75	39.86	.423	18.27
Loaders and wheelers......	31	276	40.0	87.0	6.7	40.2	51.9	77	21.97	48.79	.561	22.53
Off bearers	34	178	40.8	94.6	7.0	42.0	52.9	79	17.10	45.45	.439	18.77
Pluggers	34	43	48.3	96.7	7.9	47.4	53.6	88	20.26	48.29	.469	21.64
Total	35	1,803	47.7	95.4	7.8	46.8	55.1	85	20.00	45.35	.464	20.64

MIDSUMMER MEETING OF AMERICAN CERAMIC SOCIETY.

THERE IS NO IMMEDIATE danger of resumption of German competition in ceramics. Exportation by Germany is at present impossible and will remain so for some time. Factories are operating to from 40 to 50 per cent. of capacity. The shortage of fuel is so acute that German plants are in many cases burning wood.

This was the message President R. H. Minton carried to the hundred or more members of the American Ceramic Society who attended the summer meeting in Chicago, August 16, 17 and 18. It was a pleasant climax to the largest and most successful "dog day" session in the history of the organization.

President Minton's address was timely in that he completed a four-months' trip through Europe, including ten weeks in Germany, barely in time to rush half way across the continent to the Chicago meeting and deliver his talk at a banquet in the Hotel LaSalle August 18.

"I found conditions very bad in Germany, both in the ceramic industry and in general," he declared. "What I saw convinces me that the United States will be free from German competition in ceramics for some time, which is fortunate in a way because if the Germans were able to export, the present rate of exchange would give them an advantage over American manufacturers.

"The lack of coal is the great handicap in the industry. The Allies have taken away the mines of the Saar Valley, the Silesian fields and part of the output of the Ruhr Valley, so that when the remainder has been apportioned to the various industries and to domestic use, there is little left for ceramics.

"I visited 28 plants in all, including potteries, brick plants, stoneware plants, refractory plants, electric porcelain plants, and stove, sanitary and roofing tile plants.

"Many of these I found entirely shut down. Others were burning wood and working under fearful difficulties. I should estimate the present rate of efficiency and output at not above 50 per cent., while it would probably be closer to 40 per cent. Aside from the coal shortage, there is a serious lack of raw products, due to the general disorganized condition of industry.

"I believe Germany is just about able to take care of her domestic needs in ceramics, and she is exporting in small quantities to Holland, Denmark, Norway and Sweden. But it will be some time before her output has reached such a point that she can again enter the American markets. How soon this will be I cannot predict. I will say, however, that if the present rate of exchange endures, she will be able to compete very well with American goods because the rate works in her favor.

"After seeing what I did over there, I am inclined to be pessimistic on the general outlook. Fuel and raw materials are scarce. Food is being rationed just as it was during the war. In fact it is almost impossible to get enough food of a decent quality anywhere in the country except in the large city hotels, where it is obtained by a system of smuggling. Suffering is intense. The Germans are paying a horrible price for their attempt at world domination."

The address of President Minton was a surprise both to himself and the members of the society, most of whom did not expect him to be able to attend. For the reason that he might have been delayed, the identity of the principal speaker had been withheld.

"I have had just four minutes to prepare this," he told the banqueters when F. B. Ortman, of the Northwestern Terra Cotta Co., chairman of the local committee, acting as toastmaster, called upon him. As is the custom of the society in its summer meetings, speeches were practically "tabooed" at the banquet, and there was the customary lack of ceremony. The toastmaster, however, called upon new members to stand as he announced their names, to further acquaintances, and there were many new faces in evidence.

The program of the summer meeting included a number of inspection jaunts to ceramic plants in the vicinity of Chicago.

The members assembled in the East Room of the Hotel LaSalle on Monday morning, August 16, where they purchased tickets for $5, which paid traveling expenses on all of the trips.

The first visit included the plant of the Bach Brick Company, where considerable attention and interest was bestowed upon the novel setting machine in use. It is a large, electric traveling crane, with long steel fingers, which can pick up from 500 to 600 brick at a time, transport the load across the plant, and set the green material in the kilns.

During the afternoon of the first day the members, over one hundred in all, inspected the Northwestern Terra Cotta plant, particularly the new 320-foot Dressler tunnel kiln, which unfortunately was not in operation, although practically completed. The banquet in the evening completed the program of the first day.

Tuesday, August 17, the party took in three plants in the morning, the Lindsay Light Company, where gas mantles are manufactured, the Coonley Manufacturing Company, in Clyde, a suburb, and lastly, the Western Electric Company, which has its own equipment for firing telephone insulation necessities.

Here the luncheon turned into a quasi-business meeting and the rules committee discussed some proposals that will be placed before the organization at the regular annual business session in Columbus during the last week of February.

One suggestion was that the initiation fee be abolished in cases where an associate member becomes an active member. Another was to the effect that associate membership dues be made the same as regular dues, $7.50 a year, instead of $5. The latter proposal mentioned the sum of $10 as "the maximum dues," which indicated a desire to raise the fee to this figure. This, however, is a matter up to the entire organization at its annual meeting.

After spending part of the afternoon, following the luncheon, in the enormous plant of the electric concern, the members were released to find amusement for themselves, which each did in his particular fashion.

The last day was spent in the north shore suburbs. The first stop was at the plant of the Fansteel Products Company, in North Chicago, where the specialties are molybdenum and tungsten. The tourists then had lunch in Waukegan and proceeded to the factories of the American Steel and Wire Company and the Chicago Hardware and Foundry Company, where the porcelain enameling specialities found considerable interest. A portion of the party visited Ravinia Park for supper on the way back, while others hurried to the city and "checked out" for home.

One group of the members, instead of making the north shore jaunt, visited the University of Illinois ceramic building at Urbana, at the invitation of R. K. Hursh and other members of the University staff.

Expressions of appreciation were tendered the Chicago committee which arranged the entertainment. Aside from Chairman Ortman and Mr. Hursh this body consisted of the following: B. S. Radcliffe, Midland Terra Cotta Company; Chester H. Jones, Chemical and Metallurgical Engineering; H. T. Bellamy, Western Electric Company; William W. Wilkins, Claycraft Shops; W. D. Gates, American Terra Cotta and Ceramic Company; F. L. Steinhoff, L. H. Menke, Theodore A. Kochs Company; J. W. Hasburg, of J. W. Hasburg & Company, and E. A. Brockmann, Roessler & Hasslacher Chemical Company.

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we again inaugurate a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

SPARK PLUGS.

QUESTION: Can you give me some information as to the manufacture of spark plugs? What kind of clay is used in making spark plugs and other electrical porcelain?

Answer. Spark plugs and other electrical porcelain is made of the same line of materials as china ware, although the process of making is not the same, nor are the mixtures the same. Each maker has his own body and glaze mixture which is the reason why each makes the "best" product.

The materials are feldspar, flint, kaolin or china clay, and ball clay. Common clay does not enter into the product in any way. The product could be made by hand, but it would be expensive and crude.

THE THICKNESS OF FIRES IN BOILERS.

QUESTION: Is it better to keep the fire under the boiler thin or medium?

Answer: The fire under a boiler should be kept as thin as possible, in order to avoid the formation of large quantities of carbon monoxide gas. There is no loss from the production of this gas, if it is all burnt again in the furnace; but when it is generated in large amounts, the escape of a large portion of it in the unconsumed form can hardly be avoided.

Many persons believe that carbon monoxide is only formed when the fire is black on top, from the addition of fresh coal. This is an error. The production of the monoxide is mainly due to the excessive thickness of the bed or fuel on the grates, or to deficient air supply; and it may be generated in large quantities from either of these causes, even when the fire is quite bright. So far as concerns loss by wasteful production of carbon monoxide, the blackness of the fire on top is objectionable mainly because there is far more likelihood that the monoxide when formed, will escape unburned. The air entering through the ash pit combines with the coal in the lower layers of the fire and forms carbondioxide which escapes unchanged if the draft is good and the fuel bed is not too thick. If there is an excessive thickness of fuel, however, or if the draft is poor as that the gases require too long a time to pass through the fire, a further chemical action takes place, the carbon dioxide taking up more carbon from the heated coal in the higher layers of the fire, and becoming thereby transformed into the monoxide, two volumes of the monoxide being formed, in this way, for each volume of original dioxide.

When the fires in a boiler are at all thick, special care should be taken to admit more air, so that any monoxide formed may have plenty or air mingled with it so as to burn it properly

As a rule a boiler fire should not be more than eight or nine inches thick when burning hard coal, but with softer coal the bed may be rather thicker. The fire should also be thicker at the back end of the grate than at the front, because it draws up more freely at the back than if the thickness of the fire is uniform. This condition is often met by slightly inclining the grates, and keeping the upper surface of the fuel-bed level.

The foregoing statements apply to boilers, but the suggestions just made are the opposite of what is desirable for kilns. In the kiln fireboxes a thick bed is desirable because, as explained, it acts as a gas producer and forms a mixture of carbon monoxide gas and coal gas which is the best possible fuel for heating kilns. Hence, within limits, the thicker the bed in a kiln firebox the better it will be for the kiln.

PAVING BRICK CLAYS.

QUESTION: What kind of clay is most suitable for paving brick?

Answer: Shales that are free from alkalies that produce whitewash and have enough iron in it, for fluxing, so the brick vitrify at a medium heat, are mostly employed for this class of brick. One-fourth to one-third of surface clay overlaying the shale often makes a better grade of paving brick, the shale alone being too brittle after burning. No. 2, or what is called bastard fireclay makes a good grade of paving brick, as such fireclay has enough impurities to vitrify at about 2,000 degrees F. of heat. In some instances a mixture of shale and fireclay is used. It all depends on the vitrifying possibilities of each clay. That determines whether the manufacturer can make a reasonable profit or whether he is going to burn up the profit by excessive consumption of fuel.

BLOATED BRICK.

QUESTION: What is the cause of paving brick swelling or black coring?

Answer: The cause of this defect has been threshed out for several years in the Clay-Journals by such authorities as Professor Edward Orton, Jr., and Professor A. V. Bleininger, but it will not be out of place to repeat it here. Paving brick swell or black core when the brick are heated up to a red heat before the water is entirely evaporated and also when the brick are heated too rapidly by fast and heavy firing before the carbon in the clay is expelled. Then the outside skin of the brick vitrifies, closes up the pores and confines the carbon. The unconsumed carbon would not get a further supply of oxygen or air. These confined, enveloped carbon gases, when in a highly heated condition, become very active and produce (as many have experienced) some very peculiar and detrimental results, producing swelling and black core.

THE USE OF WASTE HEAT FROM KILNS.

QUESTION: Will you please tell me something about the use of waste heat from kilns?

Answer: The amount of heat which is wasted in almost every kind of kiln and oven is known to be large, and most manufacturers of clay products are agreed that it ought to be utilized. This heat is only used to a very limited extent, however, for several reasons, of which one of the most important is the unwillingness of the burners to have any other structure connected to a kiln as they believe that it interferes with the draft and working of the latter. The time has now arrived when any saving which can be effected in the coal consumption of either potteries or brick or tile works must be put in hand, and it is, therefore, desirable to consider what can be done in the utilization of waste heat.

In the first place, it should be noted that there are two sources of waste heat which should be considered quite separately. The first is the heat produced during the firing of the goods, and it is contained in the waste gases which would otherwise pass up the chimney. The second kind of waste heat is that which remains in the goods, kiln or oven whilst they are cooling; this heat would ordinarily be dissipated into the air, but it may be recovered, to a large extent, by drawing a current of air through the cooling goods. The production of steam from the waste flue, or chimney-gases of a kiln is worth consideration, particularly in those works where the goods are dried by means of steam. Apart from the cost of the plant required, there is no particular difficulty in thus using the waste heat, though to give satisfactory results some arrangement would have to be made to keep one kiln always under fire. Where the latter condition can be fulfilled, however, it is more economical to use continuous kilns! It is a matter which would require very careful investigation, whether it would pay to install the plant necessary to convert the waste heat from a single kiln into steam for heating purposes. The situation of the kiln and the drying floors is also important, as if they are at some considerable distance from each other the loss of heat in the transmission of the steam would prevent the installation from being of much value.

Perhaps the most feasible use of such an arrangement is in the manufacture of blue bricks, where the final reducing period offers considerable difficulties in the use of continuous kilns. If the waste heat from a single kiln were taken to a special boiler, it might be used with advantage, especially if the unburned portion were to be properly consumed by the addition of a supplementary amount of air between the kiln and the boilers.

One firm on the Continent has made an ingenious use of the heat in the cooling kilns, by drawing it into the shops and offices, and so doing away with the necessity of stoves and fireplaces. For this purpose the hot air from the kiln must be mixed with a very large volume of cold air to the required temperature, and even then the air is uncomfortably "dry" and cannot be regarded as a pleasant means of heating rooms.

Probably the best method of using the waste heat in a kiln is to build the kilns in batteries and work them continuously, or where this is impracticable something might be done in the production of steam as suggested above. Where a pottery has only one or two ovens, on the contrary, it is almost impossible to find a satisfactory use for the waste heat, as the supply is not constant.

CHEMICAL INDUSTRIES PROGRAM.

ADVANCED bulletins of the program being developed for the sixth annual National Exposition of Chemical Industries at Grand Central Palace, New York, September 20-25th, indicate that the coming show is to be the greatest of all held so far.

We notice among the papers scheduled one on refractory cement, another on producer gas and the modern mechanical producer, one on powered coal, and also on address by Conrad Dressler, of the American Dressler Tunnel Kilns.

There are some film series scheduled which will include handling and conveying machinery and there is a bigger booking than ever of exhibition space, all of which indicates that the coming exhibition is to be a good one and well worth attending. The fuel economy section especially should interest the clayworking industry because it is expected there will be shown in this section a great collection of modern furnaces and furnace appliances for better combustion and greater fuel economy, a matter of serious moment to the clayworker at the present time.

KENTUCKY BUILDING BRIEFS.

BUILDING CONDITIONS in Louisville and throughout the State of Kentucky would not be very encouraging were it not for the fact that the brick manufacturers of the state have been behind with their orders right along, and are kept busy filling orders already taken instead of going out to seek new business. There is not a great deal of new business offered, especially in residence building, nor is there any indication that there will be anything like a building boom this fall.

There is a fair share of industrial building, and it is this which has made the best part of the trade during the summer. Also it is this which can be depended upon for keeping up the demand during the fall. The expansion in industrial building to meet actual needs, together with the fact that a greater percentage of clay product now enters into building operations, is what holds promise for keeping the demand ahead of production in this territory throughout the balance of the year.

There was an impromptu gathering recently of a few brick manufacturers around the lunch table in Louisville, at which conditions were discussed and the above facts brought out. The luncheon gathering was called at the Louisville Old Inn by H. C. Cramer, of Lexington, who was in town for a day, and those present in addition to himself were, T. Bishop, of the Southern Brick and Tile Co.; J. T. Howington, of the Coral Ridge Clay Products Co.; and J. Crow Taylor, secretary of the Louisville Clay Products Association.

Mr. Cramer said that they had enough orders on hand to keep them busy for a month yet, more or less, and are just now getting caught up to the point where they can supply brick on orders with a reasonable degree of promptness. They have been far enough behind the demand to make it uncomfortable all the first part of the summer, but are getting things in better shape now and producing to full capacity. He reports that his new soft mud machine is doing its duty nobly, and that his producing capacity is really limited only by their drying capacity of 50,000 a day.

T. Bishop, of the Southern Brick and Tile Co., says they have been worried considerably by the scarcity of coal, and that there has been quite a scramble to keep enough coming forward to prevent a shut down. Since his report the coal situation shows some easement, which will probably be a relief to them. He says they are still behind a few weeks with their orders, and do not anticipate any trouble in disposing of what they can produce the balance of the season.

J. T. Howington, of the Coral Ridge Clay Products Co., says that they are gaining some now in digging out from under the burden of orders on hand. They accomplished this by strenuous efforts to increase the efficiency of their equipment, and at this writing they are making some additions and alterations which will materially enlarge their capacity and put them in better shape to handle their trade. They have managed to keep enough coal coming along, but some of it has cost so much in price as to raise the question of whether brick prices will have to be advanced unless the coal situation is relieved soon.

Current prices on brick in this territory and Lexington range from about $21.50 to $25.00 at the kiln, and from $25.00 to $28.00 delivered at the jobs. Taking the territory as a whole the yards seem to have about a month's run of orders on hand yet, and practically no stock accumulations. It is figured that what orders they now have and what will come between now and fall will easily absorb the summer production, and there will be no appreciable accumulation of stock until late in the fall at the best.

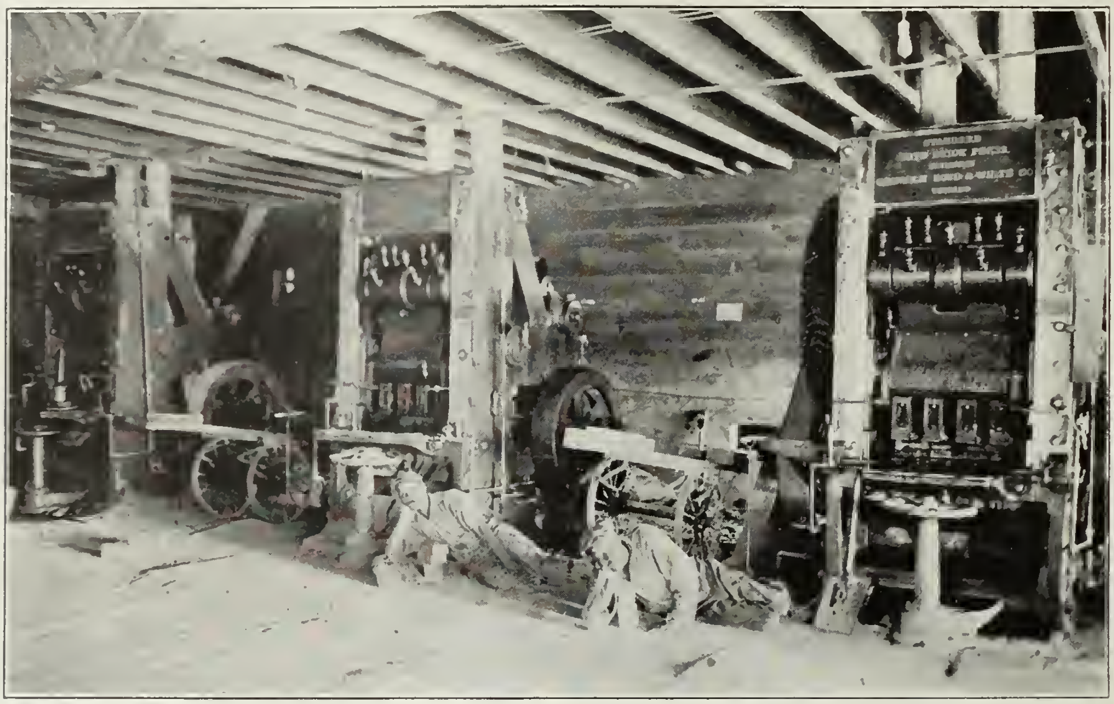
BRITISH POTTERY REPORT.

During the latter part of June the disturbed condition of the home market was regarded with complete equanimity. It was accepted as a passing phase. In some quarters the check to demand, which was confined almost completely to ornamental goods, such as vases, was due in a large measure to retailers' anxiety over a possible capital levy. With such increased capital as they may have accumulated locked up in their businesses, which, with the higher prices prevailing, naturally required very much greater capital, a levy would have been disastrous. It was no matter of surprise that they accordingly limited their buying and current expenditure to almost absolute necessity. Now that the fear of a capital levy is past, the situation should right itself speedily. There is still a big unsatisfied call for household wares, but, naturally, there has been a decline in the demand for ornamental lines, which some manufacturers have overproduced considerably. Of useful wares there are no stocks on hand; the scarcity is still world-wide, and there is no fear of a slump so far as staple lines are concerned, for a very long time.

Overseas trade continued brisk in most markets, and the last exports showed that quantities of ware shipped were gradually mounting up to the pre-war standard, while values, due to the higher selling prices, were greatly in excess of the old time level.

The promise of more coal, if realized, will mean great things for the sanitary ware and tile trades, and to most other departments also, but the building going forward means a tremendous call for sanitary goods and tiles, the latter being more and more used for their hygienic and economical advantages. For these departments of the industry there should be a five to ten years of good trade. At the same time, manufacturers are not by any means sanguine of an early improvement in the coal supply.

June showed an undoubted improvement in pottery shipments, very marked in comparison with a year ago. In regard to dinner and tea ware and other domestic goods for export, the call was for designs 'and shades of restrained simplicity and this is all to the good in manufacturing on a bulk scale. For the London stores and the better-class home trade generally, there was a notable advance in the style of patterns demanded, but there was still an enormous sale for florid ware. The bulk of exported pottery was high-class general earthenware, but during and since the war the Longton china manufacturers have developed their overseas trade considerably. The same applies to the jet and Rockingham manufacturers, whose department of the industry has expanded more, perhaps, than any other during the last five or six years. The makers of electrical porcelain are also forging ahead, both for home and export. Their field for development would seem to be almost unlimited, for electricity is coming into more extended use everyday, both for industrial and domestic purposes. The important new factory for the manufacture of electrical porcelain now being erected at Stone, Staffordshire, a few miles from the Potteries, is being equipped with one of the new gas-fired chamber ovens, which should aid materially in economical mass production.



The Boyd Press in Texas. A Glimpse of the Press Room of the Cole Press Brick Co., Ferris, Texas.

While export trade in china and earthenware continued firm during the first week of July, the weakening of the home demand became more and more pronounced. Not only fancy goods but also useful wares were affected. Cancellation of orders continued, and though this was not an on extensive scale it indicated a distinct feeling of uncertainty and lack of confidence. It was, at any rate, sufficient to show that it reached the highwater mark of the trade boom, and that before long may be on the ebb tide. At the same time, the shortage of domestic goods, particularly of dinner ware, has not yet been made good.

Some buyers were holding back in expectation of a break in prices, but their anticipations are not likely to be realized for a long time to come. Overstocked makers of fancy goods may, or course, become nervous and cut prices in these lines, but the cost of production is too high for any general reduction in selling prices.

Coal was rather better in supply, doubtless due to the small demand for household fuel, but transport difficulties still interfered with the supply of clay and added to its cost. A recent consignment of clay, sea borne from Cornwall, cost 50s. per ton in freights, compared with 3s.6d. pre-war. At the moment sea freights are rather easier, but they are still more costly than railway rates. Adequate supplies of railborne clay, are, however impossible, even with the chartering of private trucks at additional cost.

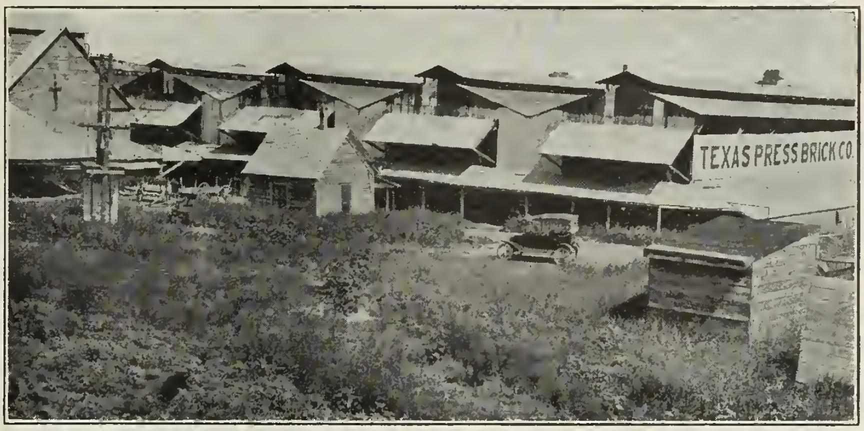
On top of the recent advances in coal and clay, two or three further increases in raw materials have been notified. In addition, the tendency of labor cost is upward, for committes of inquiry are still investigating departmental demands by the operatives. With fuel, raw materials, freights and labor at their present level, any easing of prices is quite beyond feasibility.

M. M.

THE LARGEST DRY PRESS BRICK MANUFACTURING CENTER IN THE WORLD.

FERRIS, TEXAS, a thriving little city of about 1,500 inhabitants, located 18 miles south of Dallas, on the H. & T. C. Ry. boasts, and rightfully so, of being the largest dry press brick manufacturing center in the world.

*Power House and Kiln Sheds,
Globe Press Brick Co.*



*A Portion of the Plant of the
Texas Press Brick Co.*

*Clay and Kiln Sheds,
Green Press Brick Co.*

There are eight brick plants in Ferris and their combined yearly output is 114,000,000 dry press brick. The Boyd Brick Press is used exclusively and there are nineteen Boyd presses distributed among the eight different yards.

The shale is ground by Eagle dry pans and there are fourteen of them in use at the various plants. The shale at Ferris is particularly adapted to the manufacture of dry press brick and cannot be worked by either the soft mud or stiff mud process. It is worked direct from the bank in the summer months and for continuous work the year round, it is stored in large dry sheds. By this method the plants are able to operate twelve months in the year.

The plants located at Ferris are:

The Texas Press Brick Co., A. A. Malloy, president and general manager.

The Green Press Brick Co., managed by Mr. Franklin Green.

The Lone Star Press Brick Co. is one of the oldest plants in Ferris, but it is modern in every respect and Mr. Troy Wilson is at the head of this company.

The Globe Press Brick Co. is under the able management of Mr. J. O. Atkins.

The Ferris Press Brick Co. Mr. Samuel Cole is president and general manager.

Mr. E. T. Cole is president and general manager of the Diamond Press Brick Co.

View of the Lone Star Press Brick Co. from the Clay Bank.

A "Closeup" of the Ferris Press Brick Co.'s Kiln Sheds.

Mr. C. C. Batchler is at the head of the Cole Press Brick Co.

The Kooken Press Brick Co. now under course of construction, is under the management of Mr. Van Johnson, who is also president of this new enterprise.

All of the above plants were designed and equipped throughout by the Chisholm, Boyd & White Co., of Chicago, Ill.

A train of twenty-five or thirty cars loaded with dry press brick leaves this busy little city every day and are distributed over the states of Oklahoma, Arkansas, Louisiana and Texas.

The railroads are now asking for increased freight rates, and while the public in general will admit that they are probably entitled to some advances, this admission is accompanied by a question of how much of it is simply a plan for more money. The railroads by their own conduct of the past have forfeited a lot of confidence of the people which might be useful at the present time.

BRICK HOMES.

Moderate Cost Brick Dwellings the Hobby of the St. Louis Home and Housing Association.

ALWAYS A BRICK CITY, and for many years the leading center of the dry press brick industry, St. Louis is setting the example for other metropolitan cities by encouraging the building of brick homes at moderate cost. It is one of the few cities which has devised and successfully put into operation a practical scheme for relieving the housing shortage. It is building homes, brick homes, just as fast as the material can be obtained for that purpose. Hundreds of new brick homes have already sprung up where a few months ago there were only vacant lots.

St. Louis is a great home city, a fact of which its citizens are justly very proud. They admit that it may not be the most beautiful city in the country, but they are proud of it and they are fond of telling that it is a city of brick homes.

The St. Louis Home and Housing Association was the result of this agitation.

This is a two-million-dollar corporation, supported by the Chamber of Commerce and the City Commercial Club, for the purpose of building cheap and comfortable homes in various sections of the city and country, wherever the need appears greatest.

It was originally intended that the houses would be for the benefit of industrial workers, the manufacturers subscribing to the fund deciding that it would be more practical to club together and build in one group instead of building in separate groups for their different plants.

Wage Earners Don't Purchase.

As it has turned out, however, the wage earners of St. Louis have not made the slightest attempt to take advantage of the houses so far provided.

In spite of the fact that they are undoubtedly bargains, at the present cost of building materials and in spite of the fact that the workingman is supposed to be rolling in wealth these days, there has been a surprising lack of response from the working classes.

It seems incredible, but the only way to explain it is that the working classes cannot afford to buy the houses.

"Wage earners have only a small amount of capital and small wages to invest in real estate," explained Mr. Nelson Cunliff, the St. Louisan, who has been placed in charge of the Home and Housing Association.

"They used to buy $2,000 houses, paying $400 cash and the balance over a long period of years.

"Now, with the cost of building materials 240 per cent. higher than it was before the war, a house which would have cost $2,000 in 1914, costs today approximately $7,000 or $8,000.

"This is beyond the means of the average workingman.

"But the houses are in great demand among the salaried people—the so-called middle class of St. Louis—who are anxious to vacate flats that have undergone a 300 per cent. increase in rent.

"For them these houses are a very good proposition."

He drew some photographs from the drawer of his desk. They showed the various types of houses under construction, most of them comfortable, solid-looking brick domiciles, with attractive facades and neat back yards extending to an alley.

We have seen many more attractive-looking houses for $8,000 and $9,000, but that was in the east before the war.

St. Louis Likes Brick.

St. Louis not only loves homes, but it loves brick homes, and it has some rigid building restrictions against the use of frame, tile or stucco.

Of course, this is the center of the brick industry, and it is only loyal to keep the home fires burning.

Anyway, the houses of the St. Louis Housing Association have brick walls and contain five or six rooms, with hardwood floors, tile bathroom floors, modern toilet and plumbing fixtures and the most improved kitchen equipment.

They are also located on improved streets, so that all costs of improvements are covered in the purchase price of the houses and do not crop up unexpectedly later in the form of special taxes.

The selling price of the houses ranges from $5,500 to $8,900.

These prices have been made possible, according to the association, only by instituting the most rigid economies in the buying of land and in building.

Whenever possible land was bought on streets which had been improved before the war, for which the association paid $25 a front foot.

Building materials have been bought in huge quantities and at cash, so as to take advantage of all possible discounts.

While the association acts as a general contractor and sublets most of the items of construction, it handles its own carpenter work, thereby effecting a saving of 25 per cent. on the lowest contract price.

One of the most interesting features of this housing enterprise is the scheme of payment.

This calls for 10 per cent. cash on the price of the house and the balance in ten or twelve years.

On the ten-year plan the purchaser pays $11.35 per year on every thousand of the selling price, after the 10 per cent. cash payment has been deducted.

On the twelve-year plan he pays $9.95 per thousand of debt.

The association will not permit a man to invest more than 27 per cent. of his monthly income in one of their houses—a feature of the transaction which is clearly specified in the deed.

"We figure that a man can easily spare 20 per cent. of his income for rent," says Mr. Cunliff, "and 10 per cent. for a good investment.

"If he spends more than this on a home the payments are apt to prove a strain and he is likely ultimately to prove a bad risk."

Included in the selling price of the house is an unique insurance feature, whereby the purchaser is insured, on a group insurance plan, for the exact amount of his indebtedness to the association during the ten or twelve-year period of payments.

Thus, if the purchaser should die or become totally disabled during this period, the insurance company assumes his indebtedness, immediately pays it off, and the property becomes part of the deceased's or disabled one's estate.

Under these circumstances, as the association points out with dignity, it will never be forced to the distasteful task of foreclosing on a widow's mortgage.

While the chief object of the St. Louis Home and Housing Association is, of course, altruistic—to provide homes for people who are in desperate need of them—it does not expect to lose money on the proposition.

Indeed, it is planning to make a safe 6 per cent. on its investment. While 6 per cent. is not considered much of a return on a $1,000,000 investment these days, the association feels that it will be fortunate if it makes that in an enterprise which has failed only too pathetically in other cities where it has been attempted.

They place their hopes securely in the character of St. Louis, however—St. Louis, the home city.

ANNUAL MEETING OF THE AMERICAN SOCIETY FOR TESTING MATERIALS.

THE TWENTY-THIRD annual meeting of the society was held at the New Monterey Hotel, Asbury Park, New Jersey, June 22-25. The attendance was excellent, there being present 589 members and 133 guests. The several committees dealing with clay products held their regular meetings and reported to the society a number of specifications and definitions.

The committee on building and paving bricks recommended that the tentative specifications for building brick, as printed in the last report of the society, be submitted to the general letter ballot for adoption as a permanent standard.

The question of providing specifications for concrete brick was discussed and it was decided that this matter be referred to the executive committee of the society, with the request that the matter be referred to a committee exercising jurisdiction over concrete products.

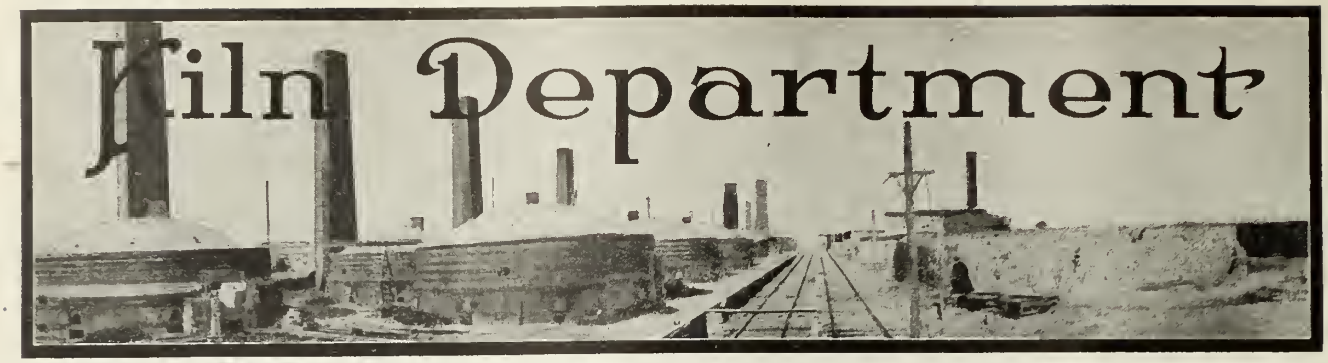
An extensive discussion took place concerning the question of specifications for the laying of bricks. The sub-committee on sewer brick was organized and proposes to do active work towards the working out of specifications for this kind of material. The election of officers resulted in the appointment of Mr. H. T. Shelley, of Philadelphia, as chairman and A. V. Bleininger as secretary. In the regular meeting of the society, June 24, the chairman of the committee presented the tentative specifications, and by vote of the meeting these were approved and referred to letter ballot.

The committee on clay and cement sewer pipe, Mr. Hering, chairman, submitted several revisions of the proposed specifications for clay sewer pipe which were approved by the society. At the same time the tentative specifications both for clay and concrete sewer pipe were referred to the letter ballot of the society for adoption as a standard.

The report of the committee on drain tile recommended the continuation of tentative specifications for one year.

The committee on refractories recommended to the society the following tests for adoption as standards: Test for determining the softening point of fire clay brick, methods for ultimate chemical analysis of refractory materials, tests for the determination of porosity and volume, tests for determining the load resistance of refractories, and, finally, definitions for clay refractories. At the meeting of the committee Mr. R. M. Howe, of Pittsburgh, presented in abstract a paper on the subject, "Vital Factors in the Testing of Fire Clay Refractories and in the Interpretation of Results." This paper was accepted for publication as an appendix to the report of committee C-8. The meeting of the refractories committee was very well attended and a lively discussion ensued with reference to proposed specifications for silica brick. Attention was given also to the matter of additional definitions referring to refractories and to the subject of spalling tests of fire clay brick.

The meeting of the society was a very successful one and the change of the meeting place from Atlantic City to Asbury Park evidently had no deterrent influence on the attendance.



DIMENSIONS OF ROUND DOWN-DRAFT KILNS

ONE OF THE READERS of The Clay-Worker asks for a discussion on the dimensions of round down-draft kilns, the most practical diameter, height of walls from floor to spring of arch and rise of crown. These questions have been discussed many times in The Clay-Worker and at our conventions and are always of vital interest to one who is about to build such kilns. Few are able to put their hands on what has been published in clay journals or in books. The elaborate treatise on kilns and burning by Ellis Lovejoy that has been running in The Clay-Worker will presumably soon appear in book form and I want to say that this book will unquestionably be the most practical, the most scientific and by far the most valuable contribution to the art of brickmaking that has ever been made in any language. What was said in Mr. Lovejoy's articles on the above questions we cannot recall, as we have not filed them, knowing that you would some day put them in permanent shape for reference.

As to the most practical diameter of kiln, up to 15 or 20 years ago, the most usual size was 26-ft. diameter, but for economical reasons the diameter has been gradually increased until now some of these kilns are built 40-ft. in diameter. The writer has not himself built and operated a kiln larger than 32-ft. but in his engineering practice he has designed and recommended kilns 36-ft. in diameter. Undoubtedly the large diameter kilns are not so durable, other things being equal, but the writer has built kilns 30 and 32-ft. in diameter that have had the most severe use for twenty years without losing a crown and would not hesitate to increase the diameter to 34 and 36-ft. under ordinary conditions.

It is hardly necessary to say that the large kilns are more economical in fuel and labor than the small kilns and also take up less yard space for given capacity. If possible, the capacity of the kilns should be so gaged that a kiln would not have to stand over Sunday partly filled.

We would advise your correspondent, without knowing anything of his conditions, to start with kilns 32-ft. in diameter and then, if he finds, as he undoubtedly will, with a properly designed kiln, that there is greater variation in the hardness of the brick, or other ware, from top to bottom of kiln, than from bag walls to center, then increase the diameter to 34-ft., 36-ft. or more, as results may indicate.

As to height from kiln floor to spring of crown, this should vary with the product and with the fire shrinkage and vitrification range of the clay. For sewer pipe the height would generally be higher than for drain tile or building tile; for building brick higher than for paving brick or fire brick; for brick that are faced higher than for brick that are set on the sides for flashing or salt glazing. A clay that has small fire shrinkage and a wide vitrification range, that is a wide margin between the temperature at which it attains its best body and that at which it begins to fuse and lose form, may be burned successfully in a higher kiln than a clay that has high shrinkage and a narrow vitrification range.

In the former case, the walls may be 8 to 10 feet high from floor to spring of arch and in the latter case 6 to 8 feet. Moreover, other things being equal, a kiln having induced or forced draft furnaces may be higher than one having natural draft. In fact, successful burning in any kiln requires a strong draft that can be regulated and controlled easily.

As to the rise of the arch, that is the height of the top of the crown, inside, above the line of the spring of the arch, this may vary with the product. For sewer pipe a kiln with high rise is most practical. For most other products a low rise is better. For bricks to be burned under reducing conditions, such as iron-spot face brick or the dark shades of red-burning clays or shales the rise should be lower than for brick that must be kept under oxidizing conditions to produce the clean, clear colors of red or buff.

Greaves-Walker states in his treatise on the subject that it has been found by experiment that the best rise of arch is one-fourth of the diameter of the kiln, but as he gives no account of the "experiments" nor any authority for it, the statement must be regarded as empirical. In fact, such must be any statement of the kind, to a greater or less extent, since it would be practically impossible to determine such a question by experiment. To be sure some large concern might build kilns with rises of crown varying by every six inches from one-fifth of the diameter to one-half of the diameter and keep careful records of them for 15 or 20 years, or the life of the kiln, but it would be practically impossible, even in such an elaborate investigation, to keep every kiln under uniform conditions. Some conclusions, especially as to extremes, could undoubtedly be drawn, but that a scientific generalization could be made to the effect that a definite rise of crown, say exactly one-fourth of the diameter, is best in all cases for durability or burning results, is altogether improbable. Probably a scientific investigation of this question would show that no definite ratio between the rise and the diameter would follow with every size of kiln, that is, undoubtedly a low rise, say one-fifth or less, might be most practical for kilns of small or moderate diameter, while for kilns of large diameter a proportionately higher rise would be more durable.

Any single individual experience in the building and operation of round down-draft kilns, or any type of kiln or other equipment, must necessarily be limited, but good engineering combines individual experience with the experience of others the world over. The writer has recommended for many years a rise of one-fifth to one-fourth of the diameter, depending upon conditions, but only in special cases would he go to the other extreme, though in most cases would keep nearer to one-fifth than to one-fourth. It should be borne in mind that a low rise requires good construction and strong bands.

We could not close this discussion without expressing the opinion, and in the strongest terms, that no clay product manufacturer is justified today in building a new plant with the wasteful periodic kilns. There is a regenerative, continuous kiln for every condition, saving one-half to two-thirds of the fuel and much of the labor, besides other advantages. A periodic kiln or two for excessive demand or quick results or special products is often advisable but the average daily output should be in some form of a regenerative kiln. On an old plant it may be advisable to add another periodic kiln or two to fill out the machine or dryer capacity. But such advancement is being made in continuous kilns these days that the man or company that now builds periodic kilns will soon be away behind the procession and may find competition with more economical plants a losing game.—Experience.

Written for THE CLAY-WORKER.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.

THERE HAS BEEN a slump in the building operations of Evansville and several of the other towns in southern Indiana during the past month and indications are that there will not be as much building done during the next two months as had been anticipated. The building permits in the city of Evansville during the month of July amounted to about one-third of that of the corresponding month of last year. Several things have operated against building in Evansville this season. The car shortage has delayed the contractors and building material men in getting in their supplies from time to time. The strike of the brickmakers employed by the Standard Brick Manufacturing Company in Evansville which lasted several weeks prevented many of the contractors from getting brick when they most needed them. The strike of the brickmakers is now over and the men have returned to work. Another reason why building has been delayed and postponed is that prospective home owners feel like if they wait a while they will be able to get building materials much cheaper, but in this they are doomed to disappointment. Henry C. Kleymeyer, president and manager of the Standard Brick Manufacturing Company at Evansville, believes the sooner people get this idea out of their heads and start building, the better off they will be. Mr. Kleymeyer is of the opinion that wages in this country will never be low again and this will mean that prices of building materials will remain high. He pointed out that the recent raise in the wages of the railroad men indicated that wages are on the upward and not on the downward grade.

Committees from the Allied Contractors' Association and the Evansville Real Estate Exchange will get together in a short time and try to work out some plan to relieve the house shortage in that city. The shortage has been felt for some time past and rents have constantly gone up and something must be done to relieve the situation. The contractors, upon the suggestion of their secretary, Clarence P. Hammerstein, started the move. His idea is for the contractors to agree among themselves not to take jobs such as theaters, amusement halls and the like, but to give residence building the preference. Mr. Hammerstein says that in the cities where the plan has been worked that it has proved to be successful and he thinks it can be worked out successfully in Evansville. Henry C. Kleymeyer was named on the committee by the contractors to work out some feasable plan to relieve the house shortage situation. In many of the towns and cities in southern Indiana, southern Illinois and western and northern Kentucky there is a great shortage of dwelling houses and it will take several years to relieve the shortage, it is estimated by contractors and building material men.

Clay dug by an electric shovel, pulled up a tramway with an electric hoist, ground and moulded by electrically driven machinery, dried by gas in a radiated heat dryer and burned to the required degree of hardness by the same gas—that in brief is the process which the Best Brick Company, one of Evansville's newest industries, will use in the production of 50,000 daily. The new plant started in operation on August 1st, and the factory is now being operated steadily. The gas producer itself enables one man to do the work of three or four. Mechanical conveyors take the finished bricks from a kiln and load them in a freight car or wagon. The electric-gas process will make a smokeless factory. According to W. P. Woods, owner of the land on which the brick factory is located, old pieces of pottery, evidently left there by the Indians, were turned up by the workmen in making the excavations for the plant. The directors of the Best Brick Company are Clarence E. Schutz, W. L. Tucker, A. G. Sterm, Theodore Gerke, George W. Herman, Louis Ernst and Walter P. Woods.

A brick plant with an initial capacity of 30,000 brick a day has started operations at Dawson Springs, Ky., a short distance below Evansville, Ind., under the management of Elmer Ross. The plant is owned by C. F. Cato and Lee O. Brown. The company has a number of large contracts for brick to fill this summer and fall, it is announced.

Madisonville, Ky., a few miles south of Evansville, will have a $25,000 brick plant in the near future, providing all the stock for the company is sold. Spencer Melton is now soliciting stock for the concern. Mr. Melton and J. M. Reynolds are the two men back of the project. It is the intention of the company to locate the plant at the clay hills between Madisonville and Earlington, Ky. The clay deposits in those hills are said to be unusually fine.

The marriage of Henry Kleymeyer, son of Henry C. Kleymeyer, the president and general manager of the Standard Brick Manufacturing Company at Evansville, and Miss Edna Elmendorf, daughter of Mr. and Mrs. William Elmendorf of that city, took place a short time ago at the home of the bride's parents in Evansville. The ceremony was performed by the Rev. E. Kockritz, pastor of the Bethel Evangelical church at Evansville.

The bulding of the large government hospital at Dawson Springs, Ky., will require a large amount of brick and other building materials. It is one of the largest pieces of construction work that has been planned for western and northern Kentucky in a long time.

John Andres, secretary and treasurer of the Standard Brick Manufacturing Company at Evansville, was elected one of the directors of the Indiana Sunday-School Association at a meeting recently held at Crawfordsville, Ind. Mr. Andres has been active in Sunday-school work for a number of years.

The Columbia City Brick and Tile Company, at Columbia City, Ind., has been incorporated under the laws of the State of Indiana with a capital stock of $10,000. The officers of the company are: Clem Foust, president; Job Burnsworth, vice-president, and the Rev. L. A. Luckenmill, secretary and treasurer. Frank Wakeman is the manager of the company, which has started in operaton and now has one kiln in operation.

Henry C. Kleymeyer and John Andres, of the Standard Brick Manufacturing Company, will assist in the arrangement and preparation of the second annual Evansville Exposition that will be held at Cook's Park at Evansville from October 4th to 16th. The Standard Company will have one of the large booths that will be erected at Cook's Park for exhibition purposes. It has been decided that all the materials to be used in the erection of the exposition buildings shall be bought from Evansville concerns.

Michael D. Helfrich, head of one of the large pottery companies at Evansville, is erecting a handsome residence in West Heights, just west of the city of Evansville. It will be one of the finest residences in that part of the state.

A HOOSIER.

RECENT PATENTS
IN THE CLAYWORKING INDUSTRY.

No. 1,345,632. Light-Weight Refractory Brick. Ross C. Purdy and Milton F. Beecher, Worcester, Mass., patentees. Patent assigned to The Norton Company, Worcester, Mass.

This patent is awarded for a composition of matter for a porous brick comprising a burned refractory lignite clay mass.

No. 1,345,871. Brick Building Construction. Edward Nottebaum, Manila, Philippine Islands, patentee.

Brick wall construction including a series of hollow, vertical sectional posts having alternate tongues and grooves formed to interlock the meeting ends of the sections, and vertical grooves in the posts in the line of the wall, a series of superimposed concrete slabs with interlocking tongues and grooves upon their horizontal meeting edges, and tongues upon their vertical ends to engage the vertical grooves of the posts, and the continuous slabs, and bonding members by which the slabs and posts are united.

No. 1,331,323. Machine for Making Brick. Clayton Crouch, Cleveland, Ohio, patentee.

Patent for a brick-making machine having an operating station, including an endless slack chain of spaced flexibly-connected receivers, and means for initially moving a part of the receivers into abutting relation and then moving the same forwardly thereby actuating the whole chain.

No. 1,346,959. Refractory Composition and Process of Making Same. Arthur T. Hinckley, Niagara Falls, N. Y., patentee. Patent assigned to National Carbon Company, Inc., New York, N. Y.

Patent granted for a refractory composition comprising fully shrunk, graded carbon particles in mutual contact, and a ceramic bonding material proportioned substantially to fill the interstitial spaces.

No. 1,347,484. Process of an Apparatus for Molding Clay Products. Davis Brown, Bucyrus, Ohio, patentee. Patent assigned to Raymond C. Penfield, Chicago, Ill.

Patent for an apparatus for forming clay articles which comprises a mold-receiving table, a power-actuated cylinder in alignment with the table, jolt ramming mechanism having a vertically removable normally at rest and in alignment with the mold-receiving table, a hopper carried by said vertically-reciprocating table and spaced therefrom, and automatic means to actuate the power cylinder and jolt-ramming mechanism, whereby an empty mold applied to the mold-receiving table will be forced under the hopper.

No. 1,338,468. Mold for Bricks and Blocks. Stoyan V. Tsanoff, Newark, N. J. patentee.

Patent awarded for a mold having a frame of three sides with guide flanges adapted to cooperate with another similar frame to form the fourth side of said mold.

No. 1,347,534. Hollow Channel Brick and Wall Construction. Richard B. Cooper, New York, N. Y. patentee. Patent assigned to Fiske & Company, Boston, Mass.

Patent given for a channel brick of the kind named which comprises a body portion and three projecting hollow portions extending at right angles to said body portion and forming two open channels, all three portions being substantially equal in height, and the central portion having ridges overhanging the channels.

Trade-Marks and Designs Registered.

No. 120,214. Laclede-Christy Clay Products Co., St. Louis, Mo. Use of name "Suprafrax" for fire-brick and fire-tile.

No. 133,245. Formby Petrinite Corporation, Jacksonville, Fla. Registered trade-mark.

No. 133,274. Henry J. F. Ludeman, Pittsburgh, Pa. Registration of trade-mark.

No. 5,271. National Paving Brick Manufacturers' Association, Cleveland, Ohio. Registered title: "Taxpayers Value Brick Roads."

STANDARDIZING BUILDING CODES.

A technical committee of the Staff Council of the National Federation of Construction Industries is taking up a study of the building code situation throughout the country, with a view to eliminating some of the evils of the building material trade by standardizing codes, especially in relation to such fundamentals as stress of carrying members. Those preparing this study are Wharton Clay, of the Associated Metal Lath Manufacturers; B. F. Gillson, Illinois Society of Architects; C. E. Paul, Construction Engineer of the National Lumber Manufacturers' Association; Virgil G. Marani, Engineer of the Gypsum Industries Association; A. C. Irwin, Engineer Portland Cement Association; W. Carver, Architect Common Brick Association, and L. P. Keith, Secretary. They expect soon to issue a tabulation showing stresses allowed by the Bureau of Standards and other authorities. Against this will be shown the building ordinance requirements of the various cities.

ENGINEERING STANDARDS.

There are two interesting reports before us having to do with engineering standards which include a connection with building codes and brick and fire clay products. One is a copy of a report made by P. G. Agnue, secretary of the American Engineering Standards Committee, 29 West 39th Street, New York, of his visit to the national standards bodies of Belgium, France, Great Britain and Holland. The other is a copy of a paper presented by Chairman A. A. Stephenson, of the American Engineering Standards Committee, before the gathering of the National Federation of Construction Industries.

These show interesting progress in international standardization and studies which are of interest both to manufacturers of machinery and metal and to the manufacturers of clay products and the promoters of ideal building codes. Out of the work of this committee we should eventually get some ideal standards which will have the benefit of international conference and agreement.

SUGGESTION FOR MOTOR TOURISTS.

Editor The Clay-Worker:

I note in your July number, on page 28, a little sketch calling attention to the old brick home which was the birthplace of Governor James Cox of Ohio. I am thinking that you might be further interested in knowing that the Governor's present home at Trail's End near Dayton, is located on the Dixie Highway, which is paved with brick north and south across Montgomery County.

The state, in co-operation with Butler County, has under consideration at present, a brick road, the improvement of inter-county highway 184 from Middletown to the Butler-Preble County line. Brick is the only type which will be considered in this improvement. The Governor's home at Jacksonburg will lie within a mile of this improvement. It is twenty-five miles from the old home to the new home, and within a few months one may be able to travel practically the entire distance on a brick highway.

Very respectively,

JAMES R. MARKER,

Chief Engineer and Secretary,

Ohio Paving Brick Manufacturers' Association.

Whether you win or lose in whatever you undertake, it is how you play the game that counts for quite a lot.

OBITUARY.

SECRETARY OF NEBRASKA BRICK AND TILE ASSOCIATION DIES.

Frank I. Ringer, a Leader in Many Lines of Endeavor, Passes Away on the Pacific Coast.

THE CLAY interests of Nebraska suffered a keen loss in the death of Frank I. Ringer, Sunday, July 18th, in California. The funeral services were held at Lincoln, Nebraska, July 25th.

Mr. Ringer had been in poor health for some time and a trip to the coast was made in the hopes that a rest and change of climate would restore him to his old time vigor.

Mr. Ringer was a most lovable man, active in every line of work in which he came in contact, a big personality in the industrial and civic affairs of his community and state. He was secretary-treasurer of the Nebraska Brick and Tile Association, the Nebraska Soda Water Manufacturers, and the Nebraska Retail Monument Dealers' Association.

The Late Frank I. Ringer.

Those who have come in contact with him know of the deep, virile personality that helped him win his way as a leader among men. He practically founded and built the Nebraska Manufacturers' Association and only a few perhaps know of the hours of hard work he put in to develop the organization until it is now one of the leading organizations of its kind in the United States.

For twelve years Mr. Ringer was in charge of the claim department of the Woodmen Accident Insurance Company of Lincoln. In 1913 he became Commissioner of the Nebraska Manufacturers' Association.

He was a member of the Woodmen of America, the Royal Highlanders, Rotary Club, Commercial Club, and Masonic bodies.

He has been the leading spirit in upbuilding of the clay interest of Nebraska and in his capacity as secretary-treasurer performed a service that will long be remembered and praised by the clay products manufacturers of not only Nebraska, but in surrounding states.

MEETING OF DIRECTORS OF THE COMMON BRICK MANUFACTURERS' ASSOCIATION.

Plan to Hold Second Annual Joint Convention With the N. B. M. A. at New York City in 1921.

A FINE REPRESENTATIVE body of brick manufacturers from all sections of the country gathered at Chicago, August 24, the occasion being the mid-summer meeting of the directors of the Common Brick Manufacturers' Association. All the directors were present save two, Warren Griffiss, of Baltimore and W. N. Cary, of Albany, N. Y., who were unavoidably absent, wiring their regrets. Those present were C. H. Bryan, Detroit, Mich.; Ernest S. Barkwill, Cleveland, Ohio; Tom W. Green, Sioux City, Iowa; Fritz Salmen, Slidell, La.; John P. Cahoon, Salt Lake City, Utah, Charles Francis, Muskogee, Okla.; William Schlake, Chicago, Ill.; Max D. Almond, Corsicana, Texas; George A. Parry, Boston, Mass.; J. F. Reynolds, North Haven, Conn.; B. F. Webber, Chicago, Ill.; L. S. Collins, Los Angeles, Cal.; E. C. Shimer, Allentown, Pa.; Wm. K. Hammond, New York, N. Y.; H. C. Kleymeyer, Evansville, Ind.; T. L. Herbert, Nashville, Tenn.; Thomas E. Wilson, Pittsburgh, Pa.

Vice-President Bryan presided in the absence of President Schlake, who arrived on a noon train from a two months' trip abroad. Secretary Ralph P. Stoddard stated that routine business was the order of the day. The meeting adjourned at noon for luncheon at the Sherman Hotel.

At the close of the afternoon session, Theodore A. Randall, secretary of the National Brick Manufacturers' Association, was invited to join the assembly for the purpose of considering arrangements for the second joint convention of the two organizations. It was unanimously agreed that in recognition of Mr. Hammond's splendid service to both organizations the next annual meeting be held in his home town. It was predicted that the splendid convention held in New York City in 1917 would be excelled in matter of attendance and interest as a result of the associations meeting there jointly.

The meeting of the joint committees of the two associations, consisting of the president, vice-president and two secretaries, respectively went into conference and after a full discussion agreed that Secretaries Randall and Stoddard should complete arrangements for the annual convention.

A dinner was served at the LaSalle Hotel and the usual talk fest ensued, each member reporting the condition of the business in his respective locality from which it appears that but little building is being done in the large commercial centers and consequently the demand for brick is way below normal. In other sections, as a rule, the demand is fair, sufficient to keep plants running to present capacity which is below normal, owing to the scarcity of labor, etc.

Mr. Schlake gave an interesting account of his experiences abroad, depicting a condition in Europe which by contrast makes the situation here at home exceedingly gratifying.

John P. Cahoon, of Salt Lake City, accompanied by his son, extended an urgent invitation for the directors to hold the next mid-summer meeting in his home town. Mr. Cahoon's popularity is an assurance that the invitation will be accepted.

Secretary Stoddard reported satisfactory progress in the affairs of the C. B. M. A., and the members departed with renewed enthusiasm for the upbuilding of the common brick industry throughout the land.

When you come across a case where you just can't get the price you should for your brick, then for the sake of future profits and friendly co-operation, help the other fellow get a good price.

NEWS FROM THE NATIONAL CAPITAL.

FISKE & COMPANY, brick manufacturers of Boston, Mass., have written authorities here, remonstrating against the tendency, both in Washington and elsewhere, of referring to "tapestry brick" as if it were a general brick product obtainable anywhere. They state that the name "tapestry" as applied to brick is their exclusive trademark property. The term "tapestry brick" is said by the firm to have been carelessly used in the past and that many people are under the impression that the word "tapestry" refers to any kind of rough texture brick. This impression is wrong, according to the owners of the trade-mark. Fiske & Company are said to have spent a large amount of money advertising tapestry brick, and rather object to having its reputation become common property. The Washington branch of the concern is at 734 Fifteenth street.

Brick production in the Washington section has slowed up somewhat, due, in great part, to building difficulties and labor troubles which builders are having to face. It is not believed, however, that this will prove a serious or long-continued set-back as conditions are gradually showing better and agreements are being reached with plumbers, carpenters, and other building labor. Prices are holding their own, with somewhat of an upward tendency in common brick figures.

S. B. Dobbs, dealer in face brick, has established offices in the Kellogg building, on F street, near the United States Treasury, and reports a good run of business. Mr. Dobbs is well and favorably known in the national capital brick trade.

The Department of Agriculture, on its large experimental farm adjoining Arlington National Cemetery, is making extensive experiments in the use of brick for roadways, having a considerable section of well-traveled road paved with brick, and making frequent and regular examinations and tests.

The Department of Commerce reports having received from its representative in Brussels, Belgium, a communication stating that, in view of published statements that the Dutch and others, taking advantage of the low Belgian exchange, have bought large quantities of brick, clay tile, and other building materials in Belgium, which are particularly needed at this time for the reconstruction of the devastated regions, the Belgian Government has prohibited the exportation of these materials.

Inquiries have been received in this country from Poland asking the possibilities of securing brickmaking machines here, as there is a ready and waiting market there for probably $200,000 worth of such equipment, with a prospective demand for much more. Information in regard to the matter may be secured by such United States brickmaking machinery manufacturers as may be interested by addressing "Polish Economic Bulletin," London, England.

According to a statement issued by the Bureau of Foreign and Domestic Commerce, United States brick manufacturers exported to Canada in the year ended April 30, 1920, brick, tiles and clays to the value of $2,470,812. It is estimated that the exports in these lines for the present calendar year will easily total $5,000,000.

The National Brick Company, whose kilns and warehouses are located in the northern suburbs of Washington, has been reorganized, following the death of James E. Granbery, formerly president of the company. H. G. Lepley, well known in brick-making circles here, is now president and general manager. The firm has well-equipped offices in the Bond building, Fourteenth Street and New York Avenue.

Building in the national capital has taken on renewed activity, providing a fast increasing market for brick. During the three months ended on July 31st the increase in building permits issued was thirty-three per cent over those for the corresponding period of last year. Practically all of the building operations now under way in the District of Columbia are brick structures, and especially in the larger residential work in the northwestern suburbs. Brick manufacturers here look for a steady demand from this time on.

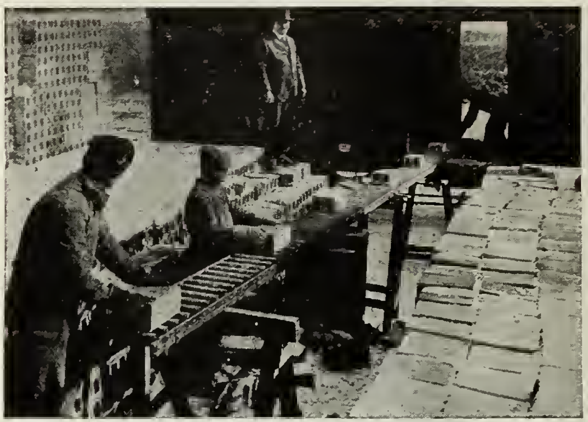
Brick manufacturers and dealers predict a jump in prices in the very near future. Common brick are now selling readily in this section for $24.50 per thousand, and the price may go to $28 or even $30 within the next thirty days.

United States Trade Commissioner Ewing, stationed at Rio de Janeiro, Brazil, reports a fast-growing market there for glazed tiles and brickmaking machinery, with but little of either of the lines being received in that country at the present time. It would seem that this market is well worth cultivating.

ALTHOMAR.

GRAVITY CONVEYERS IN CLAY PLANTS.

THERE IS NO TYPE of plant where an adequate system for conveying material through the various processes of manufacture or to the cars for loading is of greater importance than a clay or brick plant. Clay products naturally lend themselves to the danger of breakage during handling more than other manufactured articles, and any arrangement that minimizes loss from breakage effects a sizeable saving in the course of a year.



Loading Hollow Tile by Means of Mathews Gravity Conveyer.

One of the most ideal systems for conveying clay products is the carrier which operates by the force of gravity. The Mathews Gravity Carrier Company has equipped many clay and brick plants with the result that savings have resulted not only from lessened breakage but, as is the case in any type of plant equipped with gravity carriers, in time and labor.

When bricks are taken from the kiln into railroad cars by means of wheelbarrows, fifty per cent of the time consumed is non-productive, as the men must return with empty barrows.

The gravity conveyer, as shown by the illustration, extends from the kiln to the car, and a steady stream of bricks, usually four abreast, is moving all the time with man labor employed only at the loading end in the kiln and the unloading end in the car. For this type of labor, almost any kind of workman is adequate. As fast as the men work into the kiln, additional units of the carrier system are attached, care being taken to maintain a uniform grade.

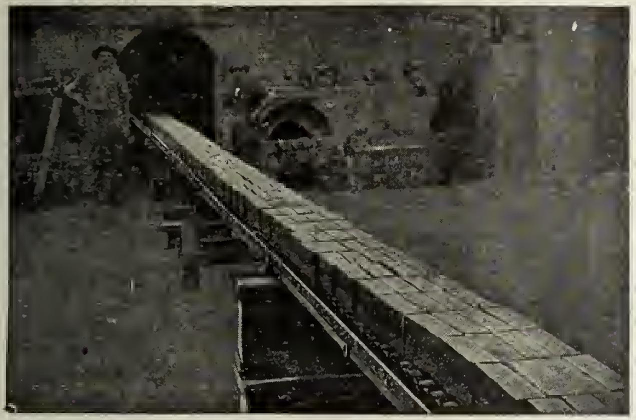
The standard brick conveyer of the gravity type is furnished with rollers 2¼ in. in diameter, spaced 3 in. centers, in units 4 ft. and 8 ft. in length.

The ends of the rollers are equipped with flanges to prevent the brick from running off.

To turn the brick in different directions from a straight line, 90 degree and 45 degree curves are made. When a car is spotted outside a kiln entrance, the men take as many 8 ft. sections as may be necessary to reach from the kiln entrance to the car door. Then a 90 degree curve is attached to the car end inside the car and three 4 ft. sections are coupled to the curve to run down to the end of the car. The curve is reversible so that the equipment can be reversed when one end of the car is full.

The grade required to carry the brick is approximately four per cent. For handling ordinary brick 12 in. rollers are recommended. These carry four bricks set side by side on edge. As it is customary to run the brick in a solid stream from end to end, when four bricks are put on the loading end, a corresponding number must be taken off in the car so that progress of loading will not be interrupted. The solidity secured from packing the bricks four abreast also prevents jostling and chipping.

THE VALUE OF OLD BRICK.



Mathews Gravity Conveyer in Operation at Plant of Hamilton Pressed Brick Co., Hamilton, Ont.

IN ONE OF the recent stories condensed by the Literary Digest quite a feature is made of the present-day value of second-hand brick. It is the story of the wrecking of the Hotel Pontchartrain in Detroit and the manager of the American House Wrecking Co. recalls that a quarter of a century ago they sold brick from a somewhat similar building for a dollar a load, with 2,000 brick to the load. Today salvaged brick, he said, are worth $10.00 a thousand uncleaned, and sometimes as high as $15.00 is bid for them.

Coincident with the appearance of this story a big industrial institution desiring to clear some ground of buildings to make room for new ones, in advertising the contract letting for wrecking the old buildings, specified that all brick must be cleaned, piled and remain the property of the company.

Good brick has always had a salvage value and always will have. Today that value is at a rather high peak and includes a sale price at times in excess of the price which a few years ago was paid for new common brick.

OUR INTERNATIONAL TRADE.

Preliminary figures from the Bureau of Foreign and Domestic Commerce on the export and import trade for the fiscal year ending June, 1920, show that we exported during this fiscal year merchandise to a total value of $8,111,176,131, and imported a total of $5,238,746,580. This left a foreign trade balance in our favor of $2,872,429,551. These are big figures and they show something of the magnitude of the business enterprise of this country, especially when we consider that the international trade represents only about ten per cent. of our domestic trade.

BRICKLAYERS WIN $12 A DAY.

Agreement Ends Month's Building Tieup in Pittsburgh.

The strike of building trades unions at Pittsburgh, Pa., which, according to contractors, has tied up $20,000,000 worth of building projects for more than a month, terminated when the Bricklayers' Union and the Brick Contractors' Association reached an agreement on the wage question.

The men won their original demands of $1.50 an hour for an eight hour day. Other locals of the building trades unions went back to work several days before, after they had agreed with the master builders on new wage scales.

BRICK AND TILE MEN DISCUSS RAIL RATES.

Texas and Oklahoma brick and tile manufacturers met Monday at the office of the Acme Brick Company, Dallas, Texas, and discussed freight rate readjustments as they affect clay products.

Ed P. Byars, manager of the Fort Worth Freight Bureau, who has been conducting the fight of the Texas manufacturers before the Interstate Commerce Commission against discriminations in favor of other sections of the country, rendered a report and the solution of the matter which he put forward at Washington and Chicago was approved.

The meeting went on record as opposing any increases of freight rates, intrastate or interstate, but, in the event of advances being authorized, favored a percentage increase rather than an increase in cents per 100 pounds.

The general increase of 35 per cent. authorized recently by the Interstate Commerce Commission has not gone into effect yet, W. R. Bennett, of the Acme Company explained, and the Eastern manufacturers are endeavoring to have the rates put on a different basis, so that they may have an advantage in shipping their surplus to the Southwest. Bennett said that three freight advances on clay products had gone into effect in four years, amounting to about 100 per cent., and the manufacturers think that no further advances are justified.

Byars left Monday night for Galveston, where he will represent Fort Worth and West Texas shippers at the hearing of the Texas Railroad Commission on rate increases.

Present at Monday's meeting were: T. J. Butler, Austin; Frank Williams, Athens; J. H. Payne, Dallas; W. R. Bennett, Fort Worth; H. C. McCord, Oklahoma City; J. W. Buckles, Okmulgee, Okla., and Ed P. Byars.

HISTORIC BRICK BUILDING.

THE CLEVELAND Builders Supply & Brick Co., Cleveland, Ohio, issues a neat little house publication called "Material Facts," in which of late they have been making a feature of historic brick buildings. For example there was illustrated on the front cover in June the Wadsworth-Longfellow house, built in Portland, Me., in 1785, one of the historic brick homes of the country, which is still in an excellent state of preservation. In the July issue there is a front cover illustration and a brief historical sketch of our great Independence Hall at Philadelphia, the construction of which was started in 1729. These historic sketches are not only interesting within themselves, but the compiling of them should put in good reference form some excellent historic data of prominent brick buildings that will prove of inestimable value in the future.

BY THE LIGHT OF THE KILN FIRE

A RETROSPECT OF EARLY BRICKMAKING DAYS.

I SAT THINKING the other evening of the time many years ago when I entered upon my brickmaking career. It was my good fortune to become closely allied and interested with a family of brick and clay products manufacturers who had carried on the trade for a hundred years or more, the oldest living inhabitants used to say they were in the trade when they were born and their fathers before them used to work for them, carrying bricks when they were boys and what the old man did not know about brickmaking was not worth knowing. "Why his girls knew more about brickmaking than any man who worked for them," they would say, a remark which I learned later on to be pretty accurate as I became a member of the family by marriage and afterwards a partner in the business.

Being young and ambitious, I thought the old man slow and out of date but after nearly half a hundred years' practice and varied experiences in the trade in more than one great country, I often think of the old man and his ways, words and advice which are as applicable today as in the days of long ago, perhaps more so. I introduced many schemes at the plant to bring it more up-to-date, as I thought. Sometimes I would get a word of encouragement from the old man who would say, "go ahead, my boy." At other times he would say when I introduced some theoretical scheme, "that is not brickmaking, my boy. Brick would have to be gold to pay, with those ideas. Take my advice and listen to me. When you close the works at night you want your hat on your head, and should not leave any man on the job at night to have to pay but the burners. Night work and overtime work never got me any money and will never get you any money or anyone else for the matter of that."

How true the old man's words were time has proven and I have yet to learn that the schemes, mostly theoretical ideas of this, that and the other where mechanical installations necessitate night and day operations, that the manufacturer makes any money out of it. I never did, but I know of a great many manufacturers who have lost a great deal of money through it.

I was sent for a short time ago to make a report on the burning problem at a plant where mechanical means were being used for forced draft. I said, "what does your night work cost you?" He said, "I don't know without going into figures." I reckon it among other costs of manufacture. What I do know is we don't get the results we want or we would not have sent for you." After going into details and figures, he found the costs of his night work would pay six per cent. interest per annum on one hundred thousand dollars; a tenth of the amount practically invested would have saved the extra night costs. They decided to make the improvements.

I was reading an article in one of the trade journals a few days ago by the superintendent of a large pottery plant who said we only require two men to do this, one man to do that and so much coal to do something else, etc. which all looks very nice on paper but he forgot to say what it cost for other work in addition and the many thousands of dollars of extra costs in installation of mechanical methods of theorists and technical men in clay products industries. He also forgot to mention the inevitable frequent stoppages and loss in time and labor which all who use these systems are familiar with, to their sorrow. He does however, say that the system only does part of the work required to be done and the ware finished in other kilns.

Some years ago I was called upon by a large firm for advice on continuous kilns and their operation. Against my advice they were persuaded by another engineer who had no practical experience in clay products manufacture, to install a fan for draft instead of a chimney. Two years afterwards I was sent for again to advise on installation of a second continuous kiln. I was surprised to see a lofty chimney erected at the works. I was very enthusiastically received by the managing director who said, "See the landmark," I said, "sure." He said, "I regretted many times I did not take your advice. I paid for that chimney twice over but we are doing fine now. Today two large continuous kilns running two fires each kiln and burning 500,000 brick per week are being operated with that chimney and the fires have not been out for many years ."

I met an old friend of mine recently whom I had not seen for some years and the first words he said to me were," I met Mr. G, a wealthy brick manufacturer, some time ago and his last words to me were, if you drop across your friend the brick man in your travels at any time, tell him I wish him the best of luck and that my hat is on my head now when the works are closed at night." Yours, etc.

OBSERVER.

RETURNING TO OHIO AFTER GOOD WORK IN THE WEST.

Editor Clay-Worker:—

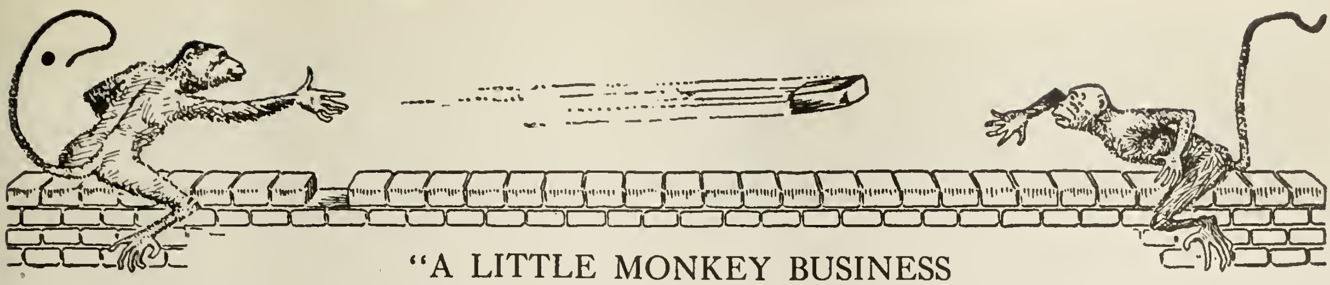
Yours received and contents noted. On the first of June I leased my interests in the Star Brick & Tile Co., Bay View, to other parties. Since I retired as general manager of the company I have received calls from different states to build and install clay products plants, also superintend same. I have accepted one from my home state, Alliance Brick Co., Alliance. Ohio.

I came to Washington in 1910 to build a brick and tile plant for what was called the Farmers Brick & Tile Co. At that time the farmers were not accustomed to burnt clay tile, but used cedar ditch wood instead. I had to move stumps and move logs to build a plant. I surely had the time of my life and that wasn't all. I had the farmers to educate to the use and necessity of the value of their land, why they should lay burnt clay tile. I had quite a struggle the first year. The second year I had no trouble, and from that time on have built up quite a trade. In fact have never been able to catch up with my orders. When I started I went in debt for fifteen thousand dollars, for I could see that this was a great country for a good tile plant. The farmers tried to discourage me, said I would never pull through, in a year or so I would have all the farms tiled. I have been here and in operation now eight years and the tiling industry is still in its infancy. I have the farmers in this part of the country waked up to the value of farm drainage. The fifteen thousand dollars indebtedness is wiped out and long forgotten. No doubt if some of my old Ohio brickmaker friends had stepped on this soil as I did, moving stumps and logs, and also once in a while in the evening, a wild black bear which would visit the plant without an invitation, they would have said "Ohio is good enough for me." There is nothing like having perseverance and snap to perform the duty I did here, and to bring the bumper crops through the aid of drain tile.

I am coming home once more to see my old friends. Enclosed find check for my subscription for the year 1921. I feel it's a pleasure to receive the Clay-Worker. Wishing you and the patrons of your journal success, I remain,

Yours truly,

Mt. Vernon, Wash. C. B. MAYHUGH.



"A LITTLE MONKEY BUSINESS NOW AND THEN IS RELISHED BY THE BEST OF MEN."

A MERE MATTER OF YEARS.

An old couple lived among the mountains of the Western Highlands; he was ninety-five and she was ninety. Their son, a man of seventy, died. As the old folks crossed the hills to their house after the burial the woman noticed a tear roll down her husband's cheek. She patted him tenderly on the arm and said:

"Never mind, John, never mind; you know I always said we would never rear that laddie."

WAITING FOR THE ANGEL.

A new settlement worker was going the rounds of her district one nice spring morning. In a crowded tenement some five or six little children gazed inquiringly at her as she entered. "Well, well, children," she said. "I never saw so many soiled faces in my life. Why don't you use some soap and water?"

"We are waiting for de angel, mum," replied Tommy Tuff.

"What angel?" asked the young woman.

"Why de lady dat cum fru here las week and give one of de kids a nickel to wash his face."

BEST OF REFERENCE.

Lady (engaging nurse)—Have you had any experience with children?

Applicant—Yis, mum. Shure, Oi used to be a child miself. —Tit-Bits.

HE WANTED IT DECIDED.

"Ma! Ma!" bawled Freddie as the usual morning wash was going on. "Do my ears belong to my face or my neck?"

Ma temporized. "Why, what is the matter?" she asked.

"I want it decided now. Every time you tell Mary to wash my face or my neck she washes my ears too."

POOR MARKMANSHIP.

Tommy was throwing stones, and his mother caught him at it. "Don't let me catch you throwing stones any more," she cautioned him. "Well, what will I do when the other fellows throw them at me?" demanded Tommy. "Just come and tell me." "Tell you!" he exclaimed. "Why you couldn't hit the broad side of a barn!"

A BIRD IN THE HAND.

Young Barnes had married contrary to his father's wishes. Meeting his parents soon afterward, the father said, angrily:

"Well, young man, I have made my will and cut you off with a dollar."

"I am very sorry, father," said the youth, contritely; and then added, "But you don't happen to have the dollar with you?"—Ladies' Home Journal.

Teacher—Katherine, what do you know about the orchid family?

Katie—Please, miss, mother has forbidden us to indulge in any family gossip.—Boston Transcript.

NOT MUCH TIME.

Second Corkscrew: I think I'll try opening car windows.—

"But you can't do much thinking in a second," maintained the utter dolt.

The Only Way.

Mrs. A—"You say you kept a cook for a whole month. How in the world did you manage it?"

Mrs. B—"We were cruising on a houseboat and she couldn't swim."—Boston Transcript.

ACCIDENTS WILL HAPPEN.

Guest—"I would have been here sooner, but I had the misfortune to puncture a tire on a broken bottle."

Host—"But couldn't you see the bottle?"

Guest—"Well, hardly; you see it was in the pocket of the fellow I ran over."

USEFUL MAN.

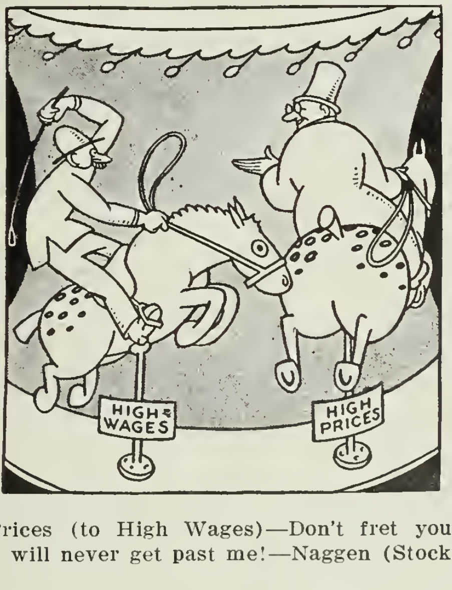
A colonel wanted a man servant, so he inserted an advertisement in the local weekly and received a great many applications, but none of them suited his requirements. But at last an Irishman was shown into his presence.

"What I want," said the colonel, "is a useful man—one who can cook, drive a motor, look after a pair of horses, clean boots and windows, feed the poultry, milk the cow, and do a little painting and paperhanging."

"Excuse me, sir," cried Murphy, "what kind of soil have ye here?"

"Soil!" snapped the colonel, "what's that got to do with it?"

"Well," replied Murphy, "I thought that if the soil was clay I might make bricks in me spare time."—New York Globe.



High Prices (to High Wages)—Don't fret yourself, my friend, you will never get past me!—Naggen (Stockholm).

THE CLAY-WORKER

Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

Title registered, contents copyrighted.
THIRTY-SEVENTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " "	10.00
Ten copies, " "	15.00

Foreign subscriptions 65 cents additional.

☞Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
226 East Ohio St. T. A. RANDALL & CO. [Inc.], Indianapolis.

Vol. 74 August, 1920. No. 2.

CURRENT COMMENT.

Higher railways rates are here.

* * *

Now then, let us have better railway service.

* * *

Dog days this year finds brick no longer the under dog.

* * *

There is a report that the silk shirt wave is receding rapidly—shimmying away, as it were.

* * *

At that higher freights are not as bad as freight embargoes. But, are we now rid of the embargo?

* * *

The high price hurrah is getting weaker in tone and losing some of its kick, and that's good news to a lot of folks.

* * *

Some brick prices will have to come down some in the course of time, but remember it is easy to cut down and hard to raise up again.

* * *

There is room for science and fuel saving in brick drying as well as burning, and generally improvement in drying equipment means a greater plant capacity.

* * *

One of the best of the current reports coming in is that which tells us that the nightmare of unrest is passing and that workers everywhere are settling down, becoming more efficient and better satisfied.

* * *

There has lately been a public awakening to the fact that we are cutting off our forest resources just three times as fast as we are producing new timber, and this is leading to much concern for the future. One good way to help relieve that concern is to use more clay products instead of timber in building operations.

* * *

One reason experience is worth so much in business is that we often pay very dearly to get it.

* * *

The hollow tile folks have a feeling that they should be on a par with the brick folks in the freight classification.

* * *

Coal conditions look a bit better at this writing, and they need to get considerably better yet to satisfy the public.

* * *

Proper engineering will sometimes double the capacity of a plant with a comparatively small cost for additional equipment.

* * *

One good slogan among the clayworkers today is that it is better to pay high wages for good men than to pay low wages and get poor help.

* * *

When a man can curtail his working force and still maintain his standard of production, it is a sign of genius in management, or more hustle on the part of the workers that are left.

* * *

Now if those railway boys will just do a little collective bargaining with themselves that they will relieve traffic congestion, and will earn their money by doing it, the public will pay the price less grudgingly.

* * *

The referendum vote taken by the Chamber of Commerce of the United States shows not only an overwhelming approval of the open shop principle, but also of the recommendation that strikes by public utility employees should be explicitly prohibited and tribunals set up to adjust differences there.

* * *

Brick runs so heavy in tonnage for its bulk that it is handled at a low enough freight rate by railroads that there is an interesting problem of when and where it will pay to use trucks on short hauls. It is a problem differing considerably from the truck transportation of lighter articles which take a much higher local freight rate. If some of the readers of the Clay-Worker can give us some figures on this out of their experiences it will be appreciated and will likely help others to know when to use trucks and when not.

THE LABOR SITUATION.

Though wages demanded by labor, especially in the building trades, are discouragingly high, there is some encouragement to be found in the situation at this writing. There are reports that labor is settling down to more efficient service, and there is evidence of a more plentiful supply of help and of a realization among the workers that those who are poor and inefficient may lose their jobs and be weeded out. So while labor still comes high it is proving more efficient and technically the situation has improved considerably.

THE VICIOUS COAL CIRCLE.

There is a sort of vicious circle formed by the fuel situation, the scarcity of coal, the high prices, and the slowness of transportation which makes a panicky condition in the coal market, the giving of priority to coal shipment to help relieve the situation creates a shortage of cars for shipping building material and other products, thus retarding work and adding to cost and in some cases leading to shutting down of manufacturing industries. On the other hand, if we take cars to move other products the shortage of coal will grow worse again, so out of it all we have a vicious circle, the core of which is a failure of our transportation lines to handle the freight traffic offered. We ought to know that well enough because we have had it pounded in us persistently. What we do not know, and ought to know, is what we can do about it right now. A remedy will be found in time; meantime there is need for patience and work, and especially for hard team work on the part of the railroad people to move freight with more speed and less congestion.

THE ANNUAL FIRE LOSS.

Statistics recently reported by the National Board of Fire Underwriters show that the national fire loss in 1919 was $325,000,000, as compared with $350,000,000 in 1918.

This shows a saving of $25,000,000 and reduces the per capita loss of $3.23 in 1918 to $3.13 for 1919. At that, however, the loss by fire remains a staggering sum, too near a million dollars for every day of the calendar year. Better buildings with fire resisting material should gradually reduce this item in our economic waste, and that is one of the good arguments to be advanced in favor of building with brick and hollow tile.

THE SEATTLE EXPERIMENT.

Seattle was one of the first of our big cities to run up against Red radicalism in organized form, and it was one of the first cities to show the typical American spirit by putting down this radicalism.

The Seattle experiment was one of organizing the associated industries of the city to break the domination of the radical order from industry by a successful stand for the open shop. The story of this is pretty well known.

Now comes an after report which justifies the action taken, because it shows that Seattle is today practically a strikeless city, so the people there feel like the Seattle plan has proven a great success.

"DEMOCRATIC" MANAGEMENT.

We would not be surprised if sometime soon someone should rise up and declare "there ain't no such animal as democratic management." Anyway there is a noticeable reaction in the current literary expressions of the day, from the tendency to urge industrial democracy, to a realization that in fact business management is a matter for minds peculiarly fitted and trained for this purpose. That thing we call the fever of unrest seems to be passing, and along with it some mistaken ideas of industrial democracy. Out of it we will get a return to that happy meeting ground between domineering autocracy and the confusion of democracy. This is one of the best signs of the times, and it illustrates that humanity in this country will in a short time find its own solutions of the problems of the day through its natural gift rather than through the uplift teachings of those with pet cure-alls.

MAKING AMERICANS.

We are reminded by the incidents of the day that it is the duty of clayworkers of the country to give a fair share of attention to the making of Americans as well as the making of brick and other clay products.

Some startling figures are being compiled to impress us with the great percentage of people in this country who cannot speak or write the English language. Perhaps some of these figures are exaggerated, but at that they remind us that part of our duty is to instruct the foreign-born in our spoken language and to instruct the illiterate in how to write our language.

That is not all, however; there are many among us born and raised here who can both read and write, and yet are following after false ideas simply because they do not rightfully understand the essential ideals of Americanism. We must make the right kind of Americans out of those born and raised among us as well as inculcate in those who come to us from abroad the doctrines of Americanism.

SELLING FIRE BRICK.

Proper salesmanship in the handling of brick of any kind calls for some technical knowledge of the product and its uses. In fire brick the importance of this kind of knowledge is emphasized because of the varying qualities and uses of the refractory products being made. The really good fire brick salesman must not only know the technology of refractories in their making, but he must also make a study of their effects in services for different uses. He must in short become a refractory engineer as well as a bright salesman. When he gets the right information properly catalogued, couples it up with the right kind of scruples and ideas for rendering service to the users of refractories, then he is a qualified and valuable man to both the producers and consumers in the industry. Such is the ideal type of man to sell fire brick.

THE PUBLIC PAYS.

There has been awarded a further increase to railway employees, amounting to a matter of a few hundred million dollars, on top of what was already a startling high wage rate. The organizations of the railway employees have accepted the award, with a show of reluctance, and now the public will proceed to pay.

Already we have been told that the railroads needed an extra billion to put themselves in shape, and now on the heels of this and of the expressed opinion of hard thinkers that a higher wage level for railway workers would be uneconomic, there comes this further advance, piling practically another billion of obligations on top of the previous shortage for the public to meet.

Our railway situation has come to a pretty bad pass any way you look at it. The equipment has run down, they are unable to handle freight offered, thus putting a burdensome check on industry and commerce, and now on top of all this is piled a still higher obligation for wages to satisfy the organized employees. It indicates that there has been lack of both vision and management in railway circles, and that the temper of the general public is going to be sorely tried and its pocketbook sadly flattened before we reach the goal of satisfaction in railway equipment and service.

POTTERY REPORT FOR 1919.

A preliminary survey made by the U. S. Geological Survey shows that the pottery industry in 1919, though with unsettled conditions, had a prosperous year.

The total value of the product turned out was, according to a preliminary estimate, $76,140,000, the greatest on record by over $12,000,000. This increase in total value of course is made up in a large part by increased values all around rather than by increased production. Every kind of pottery increased in value in 1919 except chemical stoneware and chemical porcelain.

The record indicates that one feature of the work in 1919 was improvement in the quality of pottery products all around, which puts the industry in this country in better shape than ever to meet foreign competition, and to go after foreign trade.

Just about one-half the total pottery produced was in household ware, that is, white ware, chinaware and similar products for kitchen and general household use. Next in importance to home pottery products comes sanitary ware, which enters into household use, too, in bath room equipment, and has shown interesting development during the past decade. This is followed in total value by porcelain and electrical supplies, which like sanitary ware, has shown rapid growth during the past few years, and which also has the promise of much future expansion.

As compared to the war period the production of chemical stoneware, which was largely used during the war in the manufacture of munition, fell off with a stoppage of work in munitions.

AN INTERESTING PUBLICATION.

We are just in receipt of the neat little house organ of the Baird Machinery Company, Detroit, Mich., which is published monthly under the title, "Baird, Detroit." The magazine contains some good articles of general interest to business men in general lines in particular and to manufacturers in particular, and a lot of "Funnygraphs" under the heading, "Rusty Borings," and advertisements of all of the Baird products, of which there are many.

SAFETY CONGRESS SEPTEMBER 27.

The National Safety Council, 168 North Michigan Ave., Chicago, Ill., announces that the ninth annual Safety Congress will be held in Milwaukee during five days, September 27th to October 1st. Details of the program will be announced later, but enough information is already available to indicate that there will be many speakers present and much of interest and value to all students, safeguarding machinery and accident prevention generally.

NEW HOLLOW TILE COMPANY FOR CANADA.

Millard F. Gibson, ceramic engineer, announces his resignation as manager-director of the National Fireproofing Company of Canada and the incorporation of the Interlocking Tile Co., Ltd., 32 Toronto St., Toronto, Ontario, Canada, with which he will be connected as vice-president and general manager. The new company will produce an interlocking tile, formerly known as the "Denison" tile.

AUGUST BOOK OF SMILES.

THE OPENER of the current Book of Smiles is brief, but carries a lasting impression:

"An onion a day keeps the doctor away—and others."

As usual, there are a number of rhymes, one of which is seasonable:

What a Whopper.

"The weather grows hotter and hotter."
Complained heavyset Mr. Motter;
"I must stay in the shade—
"If I don't, I'm afraid
"They'll pick me up yet on a blotter."

As usual, "Smiles" contains a number of useful hints. There is a bunch of them under the caption, "Helpful Hints to Movie Aspirants," and there are of course still more important hints on the use of the Standard Brick Dryer, see their ad on page 124 of this issue.

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CELITE ADDS TO SALES STAFF.

Charles Jewett Parsons has been recently added to the sales staff of the Celite Products Company, manufacturers of Sil-O-Cel heat insulating products. Dr. Parsons is a specialist in power plant work and is a graduate of the Massachusetts Institute of Technology. He will be connected with the New York office.

AMERICAN SOCIETY MECHANICAL ENGINEERS TO MEET.

The 1920 Annual Meeting of The American Society of Mechanical Engineers will be held in the Engineering Societies Building, 29 West 39th street, New York City, from December 7th through December 10th.

Sessions will be held on the subjects of Appraisal and Valuation and the Application of Engineering to Woodworking.

The newly founded Professional Sections on Management, Power, Fuels, Machine Shop, Railroads and Textiles will also conduct sessions to consider the vital problems in their field. In addition a number of valuable papers will be presented at General Sessions.

A memorial session for Dr. Brashear is planned, as a fitting tribute to his life and work.

AMBITION REALIZED.

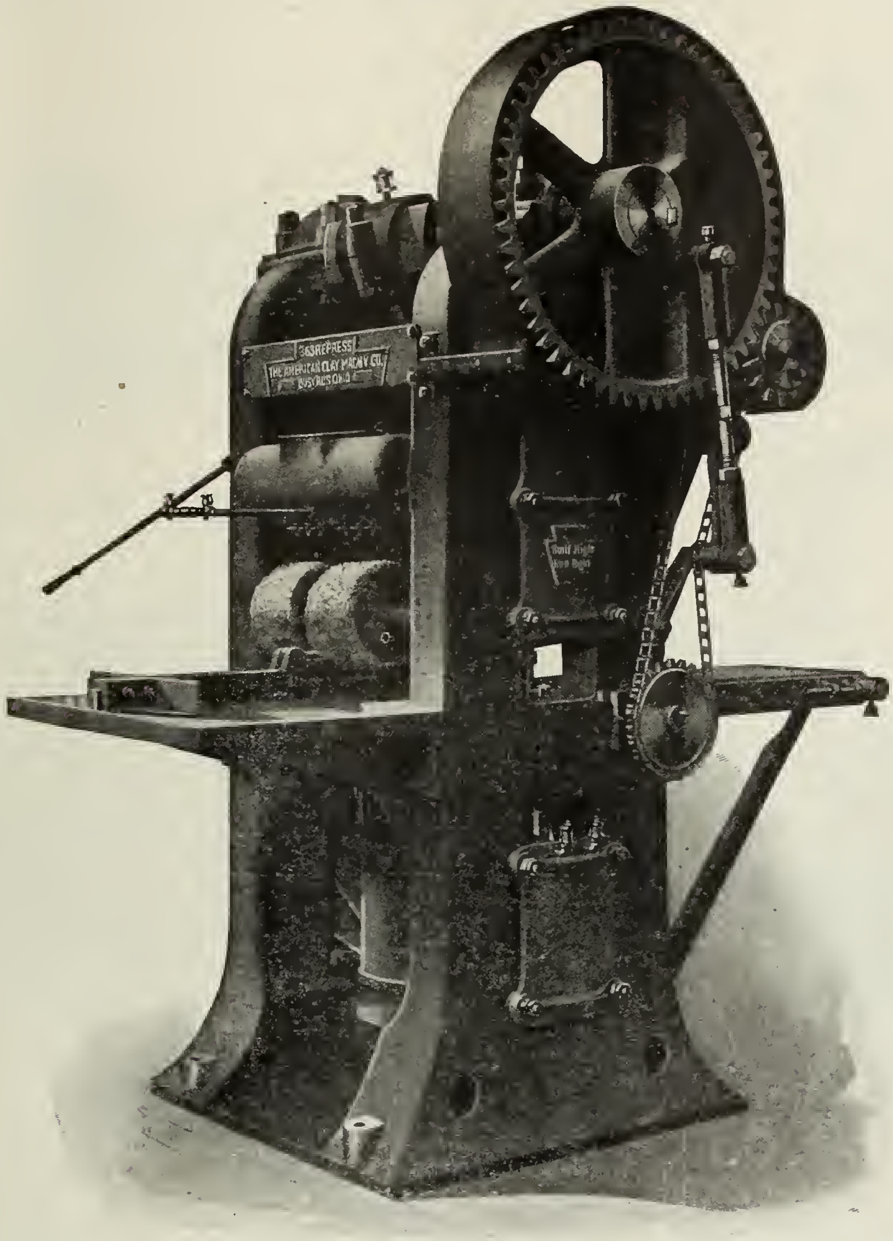
"Were any of your boyish ambitions ever realized?" asked the sentimentalist.

"Yes," said the practical person. "When my mother used to cut my hair I often wished I might be baldheaded."

First Corkscrew: What will you do after July 1st?

Second Corkscrew: I think I'll try opening car windows.—New York Sun.

American No. 363 Repress.

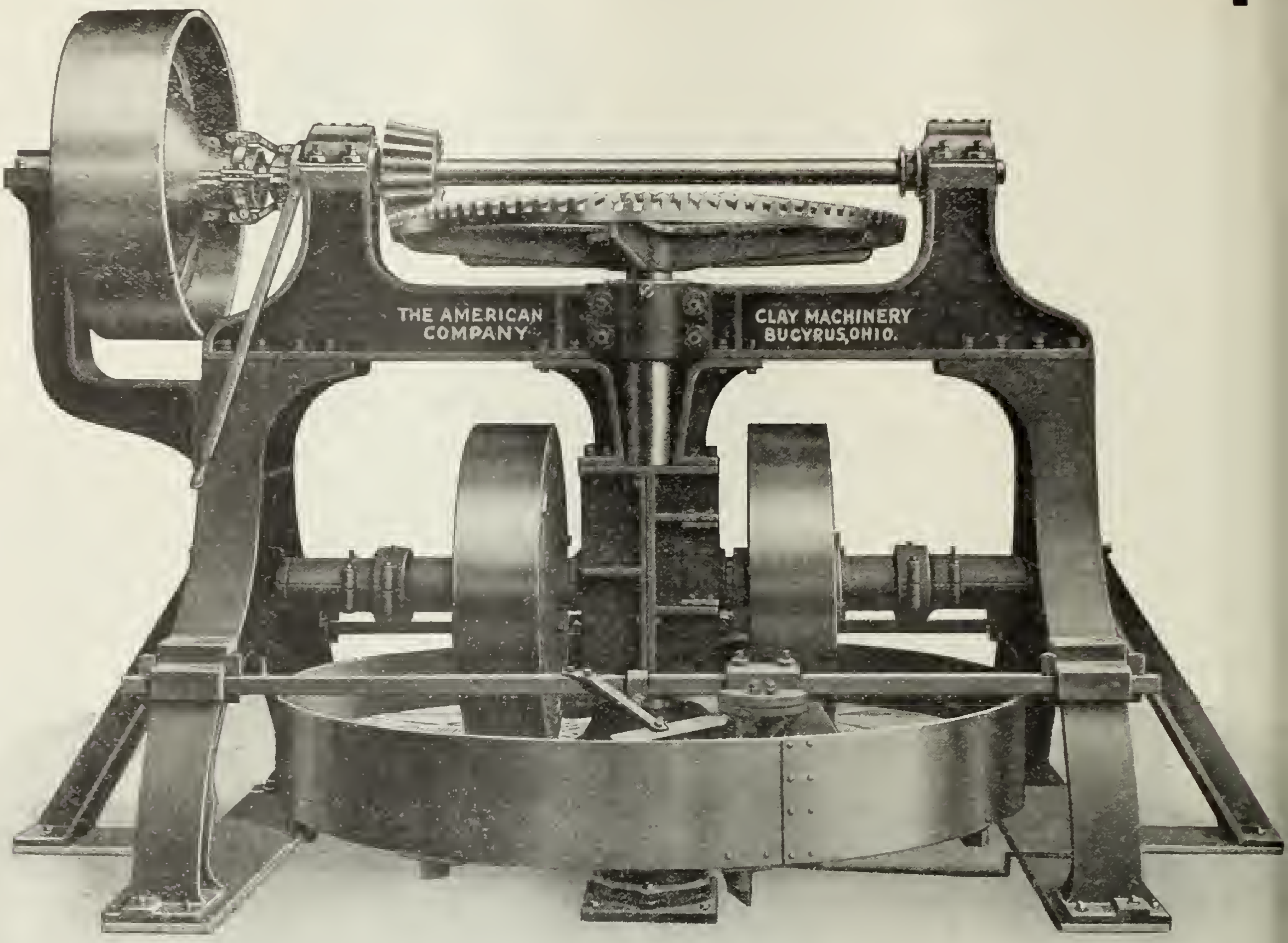


American No. 363 Repress

The American No. 363 Repress is a bit bigger and an bit better than any repress on the market. We have taken our regular repress as a basis and have built into the American No. 363 an extra bit of quality to equip it for a larger line of exacting and heavy work. We will be pleased to tell you of the extra quality features of this press on request. Get the No. 363 Bulletin.

The Hadfield-Penfield Steel Company
Formerly
The American Clay Machinery Co.
Bucyrus, Ohio, U. S. A.

American No. 339 Dry Pan



American No. 339 Dry Pan

This American No. 339 Dry Pan is a ten-foot pan. This, with the principle upon which it is built, the material, workmanship and other features, makes it one of the biggest producers of thoroughly prepared clay and shale there is obtainable. We tell all about this big producer in our No. 339 Bulletin. We will be pleased to send you a copy as we are quite sure you will be interested.

The Hadfield-Penfield Steel Company

Formerly

The American Clay Machinery Co.

Bucyrus, Ohio, U. S. A.

Written for The Clay-Worker.

CINCINNATI BRICK AND BUILDING NEWS.

THE BUILDING SITUATION here is both good and bad. It is very good considering the various obstacles that have arisen to handicap it, for there is a very fair number of projects under way and being contemplated, and the indications are that the early fall will offer some considerable work for the material men and contractors. It is bad, because there is nothing like the normal number of structures being erected, and the difficulties that are being met with regard to freight shipments and other delays. The situation is therefore not nearly so bad as it might be, though of course it could be much better.

The larger projects that have been talked of for some time, are being planned, at least in a number of cases, and the proportion of plants, apartments and residences are increasing to some extent at least. Doubtless the public has about come to the decision that prices are not soon to be lowered, and that in view of the great need for buildings of various types, there is but one thing to do and that is to build now. It is more difficult, however, to get material, and of course this keeps the projects moving somewhat slower than ordinarily.

Take common brick, for instance, there is a good demand for this commodity, but the supply, while equal to the calls, has of course to combat the transportation, which is one problem that makes it still more difficult to get the materials rapidly enough to keep all hands busy. The plants are handicapped with a lack of coal, the car situation is by no means a good one, and the prospect of higher freight rates is not one that is favorable to the clay industry. However, there is a feeling that some time the situation will be better, and there is nothing to do but to wait.

The number of building permits for July was not as good, taking the number and cost of the improvements into consideration, but the showing for the first seven months of the present year shows an increase over that of the previous year. Here are the figures: For the month of July there were 1,191 permits issued, costing $1,285,757; and for the same month last year there were 1,194 permits issued, representing $1,562,890. For the first seven months of 1920 the number of permits were 7,119, amounting to $9,236,777, and for the previous year there were 6,798 permits, the improvements costing $5,137,675.

There has been a marked increase in the number of inquiries on the part of prospective buyers here since the first of July, so that this will at least help to care for the buildings that are already up. Whether the number of projects to be taken up, which has not been as active at is might be will be stimulated, one cannot say definitely, though it shows activity in the real estate line.

There is a very fair percentage of labor here with the exception of hodcarriers and laborers, the latter two being rather difficult to obtain for some reason.

The general plans for the building of the Masonic Temple at the corner of Fifth and Sycamore streets by the various Masonic organizations of Hamilton County, have been approved, with the exception of few minor changes. The estimated cost will be $200,000. Architect Harry Hake, assisted by Charles Kuck, is making the plans. It will be a five-story building, with auditorium seating 4,000 persons, and a dining room with seating capacity of 4,200, one of the largest stages in this part of the country.

The United States Playing Card Co., Norwood, has had plans prepared by Samuel Hannaford and Sons, architects, for additions to its plant to cost about $1,000,000.

Six residences to cost about $80,000 are to be builded for

(Continued on page 160)

CLAY LANDS FOR SALE AT ATTRACTIVE PRICES.

Possible to Recover Sufficient Coal to Burn the Clays.
Railroad Switches Already in Operation.
Good Water Supply.

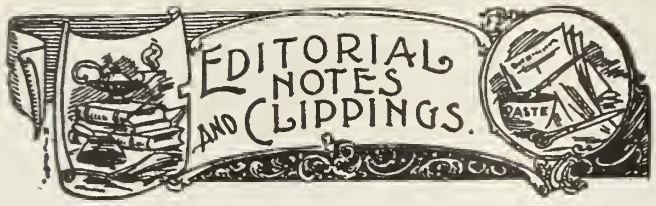
IF you are in the Market for:
Lower Kittanning
Clarion
Oak Hill
Sciotoville or Olive Hill
} CLAYS

You now have an opportunity to buy large acreage of Ohio's best known building and fire brick clays at bargain prices. Roughly estimated, the territory contains over 80,000,000 tons of the above clays in Vinton and Jackson Counties, Ohio, on the B. & O. and D., T. & I. Railways. In one operation it is possible to recover a four-and-half seam of coal with a clay bed from five feet and upwards in thickness. In some places the clay measures over ten feet. The Sciotoville Clay is one of the highest grade clays in the country. These clays have been manufactured at Oak Hill, Hamden and McArthur, Ohio, for many years, and their product enjoys a wide and favorable reputation. All the property, consisting of eight thousand acres, reached by switches. Labor trains run daily from Wellston. Houses on the property for Superintendents and others. Ample water supply. Will divide the acreage to suit purchasers or sell the entire territory. Reports of analytical tests available.

All inquiries should be directed to A. K. Williams, Engineer, Superior Colliery Company, Wellston, Ohio. Facilities will be provided for those desiring to see the property.

All proposals subject to prior sales.

U. S. Morris
Wellston, Ohio



EDITORIAL NOTES AND CLIPPINGS

S. S. Dixon, Fayetteville, N. C., will establish a brickmaking plant at that place.

The Bigelow Clay Products Co., Detroit, Mich., has been incorporated with $200,000 capital stock.

The Bray Brick Machine Co., of Dover, N. Y., has been incorporated to manufacture brick, tile, etc., with $1,000,000 capital stock.

The Raleigh-Wyoming Coal Co., of which G. T. Harris is treasurer, plans to erect a brickmaking plant of 30,000 daily capacity at Charleston, W. Va.

James E. Walsh has sold his brick plant at Caldwell, Idaho, and moved to Vincent, Ore., where he has charge of the brick making plant of the Parmer Lumber Co.

The Tri-State Brick, Tile and Coal Co., Columbus, Ohio, capital $600,000, has been incorporated by W. Klein, T. W. Bryson. J. A. Roth, B. H. Vose, G. McClure, D. J. Davies and C. L. Dierker.

The West Virginia Brick Co., of Charleston, W. Va., has been incorporated by W. E. Caldwell, Louisville, and Homer Wiseman, Clarence Beecher, M. C. Gilchrist and H. W. Bowers, all of Charleston.

The McGrow Brick Co., has been incorporated at Gaffney, S. C., with $100,000 capital stock. The officers are, president, J. A. Carroll; vice-president, J. N. Nesbit; secretary, C. D. Meadows, and treasurer, T. D. Daniel.

Charles Brewington, of Stamford, and C. C. Frampton, of Coleman, Texas, are interested in a movement to erect a brick, tile and pottery plant at Eastland, Texas. Both men are experienced in the manufacture of clay products.

Thomas A. Hibbins, general business and sales manager of the Stevenson Company, Wellsville, Ohio, writes that they are running to capacity with orders coming in very nicely. He is quite pleased with the line of business for the year.

The Sheehan North Co., of El Paso, Texas, has purchased most of the stock in the Atlas Brick Company, of that city, at a price, it is understood, of something more than $100,000 The new owners are planning extensive improvements to the plant.

A large force of men is now employed at the plant of the Lincoln Clay Products Company at Lincoln, Cal., and according to M. J. Dillman, president and resident superintendent of the plant, the prospects for the year are all that can be desired.

L. E. Morris, of Roswell, N. Mexico, has purchased a tract of land on which he will erect a brick plant. The machinery has been ordered and Mr. Morris hopes to have the building ready by the time the shipment of machinery arrives.

R. A. Greider, a drainage contractor of Arlington, Wash., contemplates the erection of a drain tile plant at Mt. Vernon, that state. There is a heavy demand for tile in that section and he is optimistic over the future of a tile manufacturing plant.

At a recent meeting of the stockholders of the Manitowoc Clay Products Co., Manitowoc, Wis., a resolution was passed to change the name of the corporation to that of the Leach Clay Products Co. Elmer Leach is president of the company and H. M. Clark is secretary. The principal offices of the firm are maintained at Oshkosh, Wis.

Part of the equipment of the brick plant of the Prescott Lumber and Brick Company in South California avenue, Fresno, Cal., has been purchased by the S. P. Brick Company and is now being moved to the S. P. plant near Exeter on the Porterville branch of the Southern Pacific railway. New machinery is also being installed, it is said, bringing the cost of the expansion to about $100,000. The Prescott Lumber and Brick Company has contracted for a share of the Exeter output during the next two years. The plant's capacity is 75,000 brick per day.

The Warren Brick Company of Warren, Ohio, has been incorporated by W. K. Gardner, M. A. Vickery, L. M. Kelty, M. L. Etsch and W C. Swaney.

The Stamford Brick Works of Stamford Texas, report they are sold to capacity, and are now installing a dryer and additional kilns with a view of manufacturing building tile later on.

W. W. Dennis, of the McNear Brick Agency, is spending a great deal of time at the plant in San Raphael this summer. The plant has installed a new kiln, but the output is still far behind the demand.

The plants of the Purington Paving Brick Company of Galesburgh, Ill., was among the industries seriously affected by the coal strike in the Illinois and Indiana coal mines. They were shut down entirely for a short period.

Rayman F. Fritz, of Rock Creek, Ohio, writes that he is investigating the brick and tile business with a view of starting a plant at that place in the near future. He will be interested in receiving catalogues of brick and tile machinery and supplies.

The Central Clay Products Co., of Monmouth, Ore., has been incorporated at Monmouth, Ore., with $10,000, to manufacture and deal in fire, paving and building brick, clay blocks, sewer pipe and tile. R. U. Steelquist, G. M. Partridge and Ira C. Powers are interested.

Fire of undetermined origin, starting in the boiler room of the Kittanning (Pa.) Brick and Fire Clay Co., destroyed the building housing the boilers and spread to adjoining structures of the plant, entailing a loss estimated at $50,000. The fire was discovered by men en route to work.

John F. Keenan, general manager of the Denny Renton Clay & Coal Co., Seattle, Wash., has been elected president of the Manufacturers' Association of Washington. Mr. Keenan has been identified with the association through his firm for many years, serving on the board of trustees for several years.

Mr. Wilson, the general manager of the Salem, (Oregon) Tile & Mercantile Co., has been making a number of improvements in the plant, including the addition of a steam shovel for getting out the clay. The company is having a splendid demand for their product, and a number of other improvements will be made in the near future.

The Colburn Brick & Tile Co., of Minneapolis, Minn., is making extensive improvements in the plant at Wanamingo, which will enable the company to take care of the orders for their product which are increasing so rapidly, that although running to full capacity, they cannot keep up. The new addition will enable them to double the present capacity of the plant.

J. T. Roberts, general manager of the Stockton (Calif.) Fire and Enamel Brick Co., is in the Yosemite Valley with his family for a few weeks. E. Corrigan, sales agent for the company, has just returned from a business and pleasure trip to Seattle and vicinity. He reports much new government business with the navy yards at Mare Island and Bremmerton yard in the north.

A portion of the Orcutt tract adjoining the property of the Union Oil Company at San Luis Obispo, Cal., has been purchased for a brick plant site by W. Hull and Mr. Simpson, of Boston, who are to be at the head of the newly organized company. Chrome bricks will be manufactured under a new process which is said to make them particularly valuable for building furnaces. A spur track is being laid in to the plant site and it is expected that operations will commence shortly.

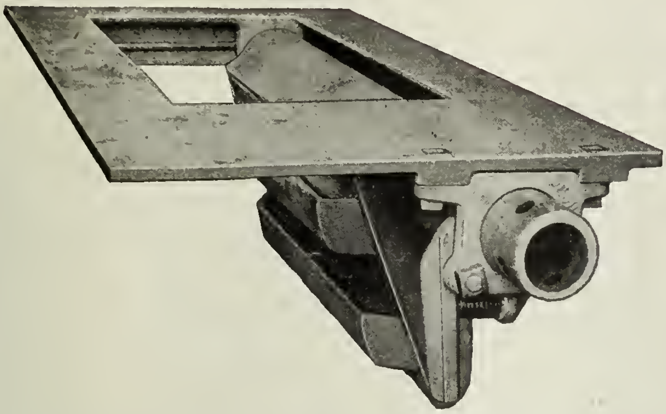
Denny Renton Clay & Coal Company, Seattle, are now manufacturing Heath Unit Tile and are shipping considerable quantities of it for use in the First Christian Church at Tacoma, and First Methodist Church, Bremerton, Wash., the latter calling for 45,000 units. Heath Unit Tile has also been specified for two school buildings, a warehouse, several dwellings and garages. This tile is made from the Renton shale material and produces a tile that stands up under 140 tons per square foot, the highest test yet recorded for material of this nature. The company is also shipping a large quantity of acid brick to points in California. The company has established a reputation for this material to the extent that not

(Continued on page 162.)

30% IN COAL 40% TIME SAVED

on a

FACE BRICK KILN



The Furnace Gas Producer with Trunnion Dumped

By Means of the

Furnace Gas Producer

Try It On One Kiln

International Clay Machinery Co.

DAYTON, OHIO

N. Y. Office—136 Liberty St.

BRICK BURNING

We have the best Forced Draft Apparatus and System for burning brick, particularly adapted for burning cheaper fuels in larger up-draft common brick kilns; showing large economies in labor and fuel, and uniformly well burned brick. Having positive mechanical control of fire in each arch so as to make any desired heat at any time. We are practical brick burners, and with technical understanding of the business of burning brick.

The Steadman & Robinson Co.
230 Cypress St., Brookline, Mass.

JOHN BOYLE, JR.
Attorney-at-Law
PATENT
Ouray Building,
Washington, D. C.
16 years on the examining corps of the United States Patent Office.

CRESCENT BELT FASTENERS MAKE GOOD BELTS GIVE BETTER SERVICE
THEY DO-AND MORE.
Write to Dept. 12
CRESCENT BELT FASTENER CO.
381 FOURTH AVE., NEW YORK.
-or ask your local dealer.

CINCINNATI BRICK AND BUILDING NEWS.

(Continued from page 157)

the market this fall in Hyde Park by Myers Y. Cooper, builder. Three residences will be builded on the north side of Observatory road, between Grace avenue and Paxton road, to cost about $20,000, each to be on a lot 75 by 200 feet. There will be three or four builded on Springer avenue between Delta and Grace avenues, to contain six rooms, at an average cost of $8,000.

William B. Floyd will build a brick garage on Madison avenue, near the L. and N. R. R. crossing, in Covington, Ky., to cost $5,000.

There has been a reorganization of the Wheatley Pottery Co., 2426 Reading road, at the McMillen street bridge. A new plant is to be builded at the intersection of Lester road and the Pennsplvania railroad, Pleasant Ridge. John B. Swift, president of the Eagle, Picher Lead Co., has become interested in the company. The company has acquired five acres of ground, where the new plant is to be builded. Isaac Kahn now president of the company, is to remain in charge of the pottery company, it is said. The plans for the new plant are being prepared. The company has occupied the present plant for the past seventeen years, and this may be continued as a pottery. The Wheatley Co. manufactures garden pottery and mantel tiling as specialties.

The Cincinnati Clay Products and Supply Co. finds the demand for building materials, and this includes both face and common brick, to be dull at this time. The indications as seen by this company, are not flattering at this time, and the fall does not seem favorable to a material change for the better.

Reports with the Evans Builders Co. are that the demand for clay materials, coping, sewer pipe and kindred specials, is by no means brisk. The labor, car, coal and other conditions are not calculated to improve the tenor of the situation either. So there appears to be little that looks very promising now.

There has been a very fair report heard at the office of the Builders Material Co., where orders are good, if not rushing. The trouble here is that of obtaining as much material to care for the demands as could be desired. This is a handicap, and one that is not of the good kind when the urgency of the case is so great. The prospects, as reported here, are somewhat promising for the fall demands.

The E. F. Grand Brick Co. find that the demand for brick and terra cotta have been lacking in more than a rather limited demand and don't feel overly optimistic over the prospects for the near future at least. There has really been no betterment to the demands in the past month. CINCY.

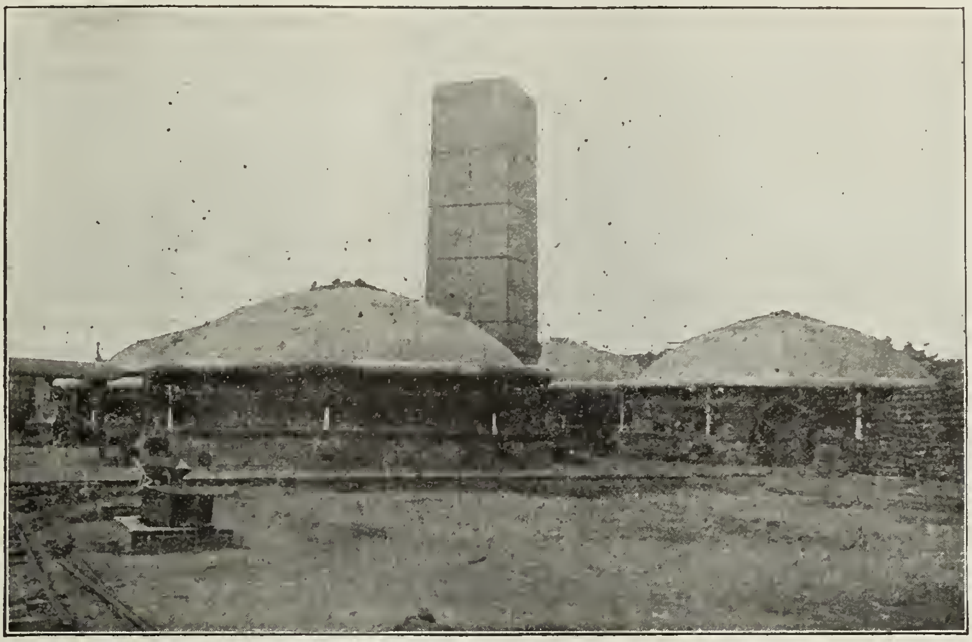
THE VOICE OF THE DEALERS.

At a recent sectional meeting of the Illinois Lumber & Builders Supply Dealers' Association the report of a committee appointed to formulate more vigorous plans for action included this paragraph:

"That this association, through its secretary, call together the executive officers of the various retail associations of states contiguous to Illinois and endeavor to enlist them in a campaign for 100 per cent distribution of builders' products through dealers."

The plain purpose of this is to develop trade in brick, hollow tile, roofing material and the many other items used in building, aside from lumber, through the hands of the retail dealer. Moreover, this is in keeping with a doctrine The Clay-Worker has been preaching for sometime, that of developing well defined channels of trade and enlisting the retail dealers in the matter of clay products for building operations generally. It will not only prove beneficial to the dealer, but it will help spread the doctrine of clay products and boost the game of better building.

THE
Underwood Producer Gas Burning System



U. S. BRICK CO., TELL CITY, IND.,

Makes the following statements:

> "We have **saved 30% on our coal bills** ever since we installed the system.
>
> "The cost of handling coal is practically nil.
>
> **"After five years'** use we can state that we have not spent a penny for repairs on producers or fire boxes.
>
> **"Saving in time is most important;** we burn in **4** days when formerly it took **8** days.
>
> "We attribute the **rich colors obtained** to the Gas System.
>
> We never made an investment that gave such **remunerative results."**

Stop wasting your fuel and labor with old methods.

For complete information write

The Manufacturers Equipment Co.
Dayton, Ohio, U. S. A.

EDITORIAL NOTES AND CLIPPINGS—Continued.

only points in California are supplied but orders come from as far away as South Africa.

The capital stock of the Ashland, (Ky.) Coal and Fire Clay Co., has been increased from $1,500 to $20,000.

The Continental Clay Co., of Wilmington, Del., has been organized to acquire and develop clay deposits. The company is capitalized at $302,000.

Plans for increasing production are being made by the St. Clair Brick Company, of St. Clair, Mich. A new kiln shed is being completed and the capacity of the plant will be increased from 50,000 bricks daily to 400,000.

The Fairchild Brick & Clay Products Company of Endicott, Neb., has its new plant in operation turning out 45,000 brick per day. The company is incorporated for $125,000 and has built a modern plant which will be operated by electricity.

C. F. Osborne, J. C. Powers, B. F. Cookman and others are interested in a new brick and tile factory soon to be established at Hampton, Iowa. B. F. Cookman, who is to be the manager of the plant has had many years' experience in the manufacture of brick and tile.

J. C. Steele & Sons, manufacturers of the New South line of brick and clayworking machinery, advises us they are too busy to even send change of copy for their ad on the inside front cover page. Later on when the present rush is over and they are not quite so crowded with orders, they will make some additions and improvements on their plant.

The Forest Grove Clay Products company opened its first kiln of brick at Forest Grove, Oregon, which is said to be of the best produced in the state. The company has been awarded the contract for furnishing the face and common brick for the Masonic and Eastern Star home now in course of construction here. This job alone will require 500,000 brick.

Five suits for damages have been filed against the Haws Refractories Co., Hawstone, Penn., by Helen Beegle Fisher, Martha Corbin, Mabel Alice Wolfe, Margaret C. Moore and Elizabeth Barman, wives of the five officials who lost their lives by drowning in the Juniata River when a flatboat capsized about a year ago. The damage asked for exceeds half a million.

The Saratoga Fire Clay Company, of Lisbon, Ohio, of which Fred C. Davis is president, has purchased the clay and coal mining business of the Lisbon Lime Co. The brick plant is near that of the Saratoga Fire Clay Company's plant, and so can be operated in conjunction with same with little trouble.

The joint clay pit of the Chicago Sewer Pipe Works and the Lyons Fireproofing company, Brazil, Ind., on the old E. & I. railroad, is now in operation supplying the two plants with the raw materials. The two companies are also holding options on clay and shale lands nearer Clay City and the possibility of the old Brazil-Saline City branch of the E. & I. being put into operation again soon indicates that the road will not be abandoned.

An effort is now being made by members of the building trade who are interested in seeing the hollow tile manufactured by the Los Angeles Pressed Brick Company used in buildings of Riverside, Cal., to have the buildings ordinance regulated and amended in order that hollow tile be used. The present Riverside ordinance does not allow hollow tile construction in the class A building districts. Carl Martin, superintendent of the Alberhill Coal and Clay Company is visiting in Riverside for a few weeks to investigate the demand for hollow tile and to see if it justifies the establishment of a permanent office in that city.

The Wilkesbarre Brick Company of Wilkesbarre, Pa., has been incorporated and has elected the following officers: Richard Aston, president; William H. Amesbury, vice-president; David H. Evans, secretary; John E. James, treasurer. The company has been capitalized at $30,000 and all of the stockholders are prominent contractors of Wilkesbarre and vicinity. The new company has bought out the Stipp brick yard at Breslau. The plant has four kilns and acres of land which insures a sufficient supply of excellent clay for many years. New kilns will be added as increased business demands. A fine quality of red building brick will be manufactured.

The Roseton Brick Co., of Roseton, N. Y., has been incorporated by S. Black, 605 West 112th street, New York City. The capital stock of the company is given as $525,000.

The Savage Mountain Fire Brick Co., of Frostburg, Md., announces that its Pittsburgh sales office, in charge of Clarence Overend, sales maanger, is now located at Rooms 1205 and 1206 Chamber of Commerce Bldg., Pittsburgh, Pa.

Many of the brick plants of Springfield, Ill., faced a shut down due to coal shortage during the coal strike, and the Decatur Brick Manufacturing Co., and the Lincoln Park Coal and Brick Company plants were compelled to close their plants.

The Christiana Clay Products Company at Stanton, Dela., has been making extensive addition to its equipment, for the last three months, and is mnaufacturing bricks at the rate of 100,000 per week. Beginning next month, this amount will probably be doubled.

The Cisco (Texas) Clay & Coal Co., will erect a paving brick plant at that point with a daily capacity of 50,000 brick. Later on they will open a department for the manufacture of pottery. They have leased a tract of land comprising 160 acres which in addition to a fine clay deposit also has two veins of coal, which will give the company cheap coal.

Miss Elizabeth Williamson, of Riverton, Ill., has been put in complete charge of the western office of the William E. Dee Clay Manufacturing company. Matthew M. Dee, who was in charge of the Riverton plant died several weeks ago, and the company has now given Miss Williamson the superintendency of the Riverton branch. Miss Williamson was Mr. Dee's assistant in the office previous to his death.

Another prominent manufacturer of clay products died recently at Burlington, Wis., when William Meadows succumbed after an illness with pneumonia. Mr. Meadows was born in England, 87 years ago. He had been a resident of Burlington and vicinity for more than 50 years. In 1878 he purchased an interest in the Burlington Brick and Tile Co., and served as its general manager until last winter, when he decided to retire from active business. Mr. Meadows was one of the oldest and most prominent Masons in the State, a member of the Commandery, Consistory and Shrine. Three children survive him.

Carl Martin of the Alberhill, (Cal.) Coal & Clay Co., and district manager of sales for the Los Angeles Pressed Brick company in that part of the state, reports that the United States government has recently purchased a quarter of a million hollow tile from the Alberhill plant, to be shipped to Honolulu, where it will be used in the construction of a federal building that is being erected at that place. The Alberhill tile were secured by the government last year for the construction of navy buildings at San Diego and have proven so successful and satisfactory that the government has now accepted them for the Honolulu construction.

Negotiations are under way to merge the Tri-State Brick & Tile Company and the C. D. & K. Coal Co., of Ironton, Ohio, and an application has been made for a new charter under the name of the Tri-State Brick, Tile & Coal Co., with a capital stock of $600,000. The two companies had the same men interested in both concerns, and both companies will profit by the merger. J. A. Roth, president of the brick company and Wm. Klein, of Van Wert, secretary-treasurer of the coal company will be officers of the new company. Many improvements will be made in the brick plant as soon as the deal is closed.

Following the recent announcement of the sale of the machinery and equipment of the abandoned brick plant at Galesville, Wis., to F. G. Davis of Tarboro, N. C., who proposes to ship the plant South, local business men have again shown interest in the plant and may form a new company to purchase and operate the brick yard. The machinery for common brick, together with power equipment and buildings, is in fairly good shape and practically ready for use. Because of the good demand for brick in and around Galesville and the difficulties experienced in obtaining shipments from other points, has led to renewed interest in the industry. The plant has been idle for several years.

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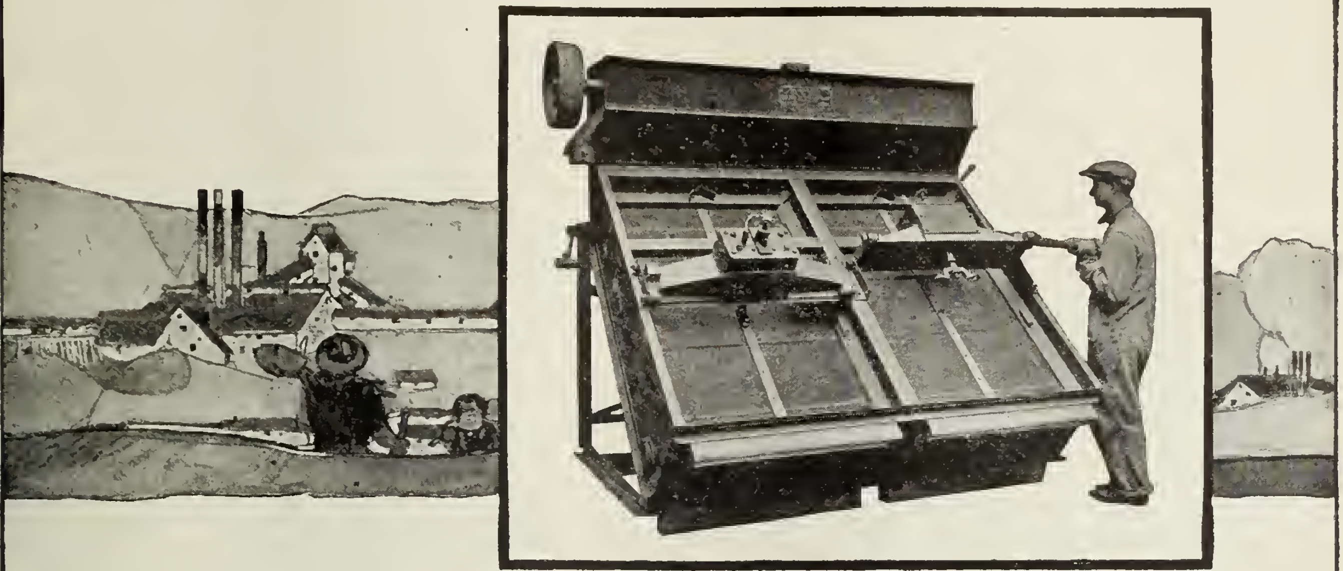

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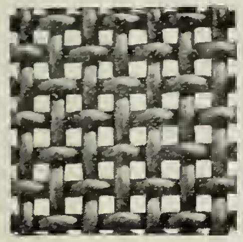
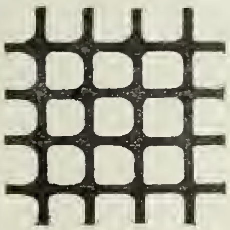
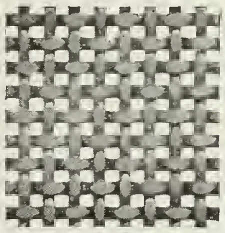
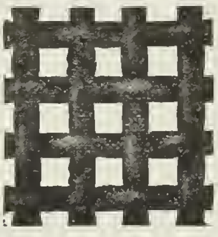








THE ANNEX

NEW YORK

WHEN Hotel McAlpin acquired The Annex, formerly the Martinique, there was established, first the spirit of enthusiastic attention that never fails to assure a guest that his patronage is valued.

Following closely upon this first important step came others which have proved equally successful—among them an expert Bureau of Information and Assistance which enables a guest to leave the details of his arrival, departure and trips he wishes to make to people who are able and willing to assume them.

Under the direction of L. M. Boomer
Frank E. Jago, Resident Manager

32nd Street and Broadway

Written for The Clay-Worker.

PACIFIC COAST NEWS.

THE BUILDING SITUATION on the Pacific Coast continues lively in spite of all the handicaps, increased cost of building materials and labor troubles. Plans for many high class structures are on the boards and the indications are that construction work will proceed steadily for months to come. Very little importance is placed on the influence of the presidential election next fall as the need for new buildings is too imperative to be balked by political changes. The financial situation seems to be improving somewhat, though without doubt a great amount of building is being held up for the time being on account of limited credits. The really essential work will get done somehow and as far as the building of high class residences goes, both in the cities and in the country, all obstacles to building are impotent to check the activity. Where exceptional wealth is concerned a way is always found to go ahead with the work.

The San Francisco building permits for July total $3,723,623, an increase of almost two million dollars over June and about the same increase over July, 1919. This record is exceeded slightly by the total for May of this year. In many of the largest cities of the Coast the July record shows an improvement over previous months. Lumber prices are lower than they were, which has a tendency to stimulate building, but clay products are firm in the market, with an upward tendency.

The proposed increase of from 30 to 35 per cent on railroad freight rates will favor the manufacturers on short hauls and will probably eliminate long-distance competition to a large extent. The California clay products manufacturers favor a percentage freight increase naturally, as outside competition is keen in certain lines.

Common brick is firm at $18 per M. The brick plants in the San Francisco Bay region are handicapped by the scarcity of labor, and practically all are behind on deliveries. A strenuous effort is being made to increase the efficiency of the yards, but it is useless to install additional equipment when labor is unavailable.

The demand for architectural terra cotta is very strong and the leading manufacturers are sold out for several months to come. The demand in southern California shows no letup.

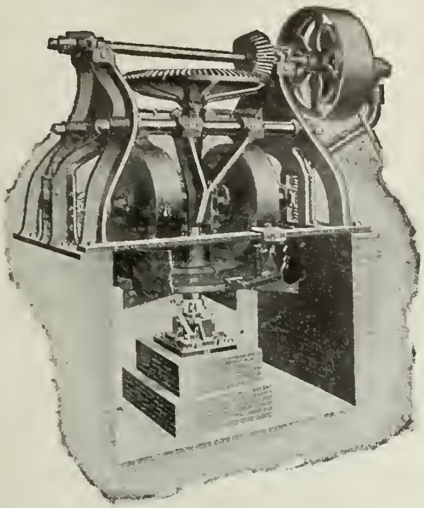
N. Clark & Sons, San Francisco, are supplying large quantities of high grade architectural terra cotta for many new jobs, among the more important of which are: The Los Angeles Railway Office building, the big Silverwood store building of Los Angeles, the Raymond Theater at Pasadena, the Highland Hospital at Oakland, and the Don Lee Cadillac Automobile building on Van Ness Ave., San Francisco. The Clark company is having splendid success with the Heath hollow building tile, the patented product which they have manufactured for them and which they handle in northern California and the Hawaiian Islands. This product is very strong and is easy to lay. It is a fine example of the "better masonry" now in vogue.

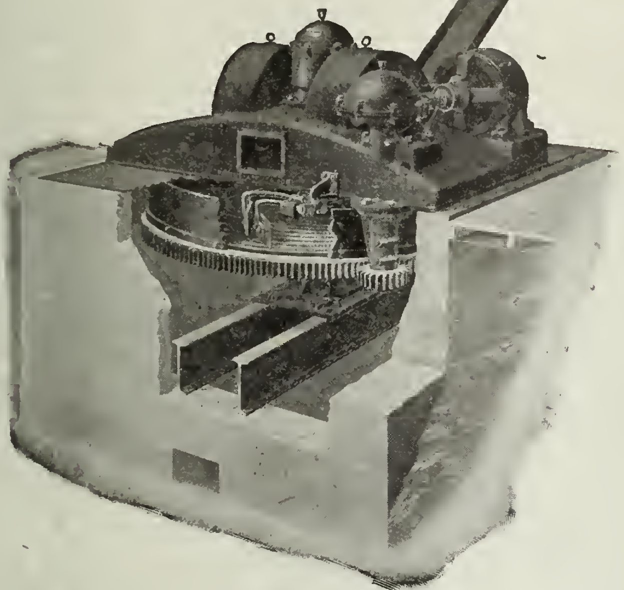
Due to the fact that school bonds carry low rates of interest there is much difficulty in raising sufficient funds for building new schools. Several important jobs of this kind are now held up because the bonds lack purchasers. With other high class securities bringing seven or eight per cent it is hard to float bond issues offering only four or five per cent on the investment.

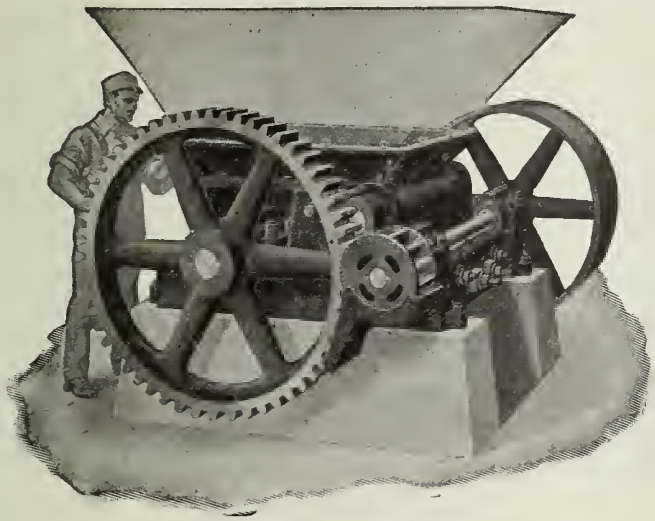
The market for vitrified sewer pipe is holding up well, still there is not the public sanitary work under way that there should be.

The conditions in the fire brick market are firm, though just for the moment there is not a vast amount of new work being started. The manufacturing plants are behind on orders, but show signs of catching up somewhat this month. Outside competition is growing less in importance. Prices have just been advanced by the Stockton Fire and Enamel Brick Company $2.50 per M, which makes the price $60 at the works. The Stockton plant is adding a new brick machine and has put in a new dry pan and made other minor improvements lately.

SUNSET.


Standard Grinding Pans Made all Sizes


Model A-300 Step Bearing Type Dry and Semi Dry Grinding Pan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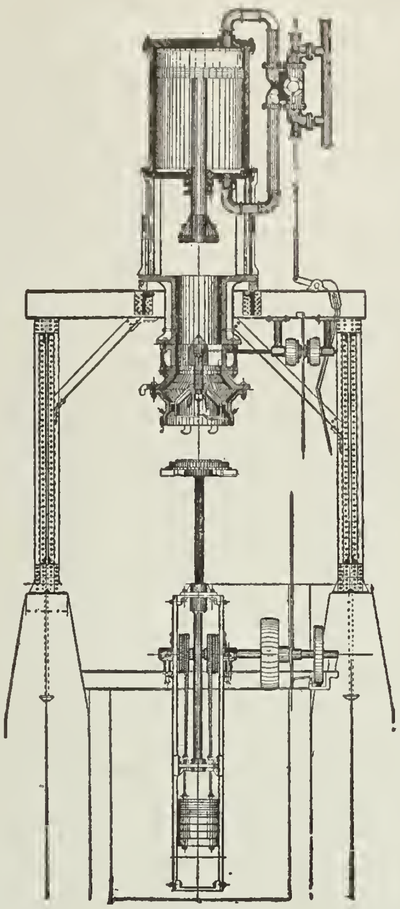
Sewer Pipe Press

Machines for
Crushing,
Grinding,
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Elevating and Conveying all Kinds of Materials.

Steam Presses for Making Sewer Pipe, Drain Tile, Hollow Block, etc., are Manufactured by

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Financial Assistance Given

Clay Product Manufacturers who desire increased output or larger equipment. I have sold many Clay Product Company Bonds, and have a large clientele for this class of securities.

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Labor cut in half, coal bill a secondary consideration. Operation under sure control and output three times greater than any railway tunnel kiln ever invented.

A perfect down draft kiln and can be operated periodic or continuous. No dream or wild cat scheme. **Practical** kiln by **practical** men of forty years' experience in clay products manufacture. Come and investigate and see plans and models. Licenses to operate granted free to three responsible firms for installation.

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The Minter System

IT burns cleaner than direct fired periodical kilns because the water-smoking is done with clean heat, and the kilns require only about 50% of the fuel usually required in fire holes. The per cent of dust, ashes, etc., is reduced in proportion to the amount of fuel required.

Investigate it from every angle—first cost, labor cost, fuel cost, production cost per 1000 capacity, flexibility, and all the way you will find the Minter System on the job ready to deliver the goods. *Write us for all details.*

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Written for THE CLAY-WORKER.

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.

DIFFICULTIES which have been confronting the brick and clay industry of Wisconsin for some time past in the way of freight transportation difficulties, labor shortage and the like, have to a slight extent shown improvement. Nevertheless, the situation is yet far from normal. Building activity in the city which was expected to be resumed soon in an effort to mitigate the present seriousness of the housing situation, has been given another jolt by the announcement that building material would again be increased in price due to the advance in freight rates granted the railroads by the government. Estimates place the increases on various building materials as high as 30 per cent.

The freight rate increase will naturally pass on to the consumer, according to Emil M. Kraatz, president of the Wisconsin Face and Fire Brick Company, Milwaukee, Wis. The increase will affect practically every line of clay products and other building material as most of these have to be shipped into the city.

"It will be just another case of the consumer being forced to stand the additional cost," said Mr. Kraatz.

Manufacturing plants throughout Wisconsin which are devoted to the manufacture of clay products are enjoying an active season. The labor scarcity has delayed the production at the Kewaunee Clay Products Company, Kewaunee, Wis., but the output is able to meet with at least part of the demand and orders are being filled as rapidly as possible. According to President C. Schmiers, day and night shifts are making every effort to meet the demand. John Fahs, Sr., a practical and an experienced brickmaker, is in charge as manager of production. The company has been able to secure a fairly large supply of wood and coal to take care of immediate needs.

Stockholders of the Vesper Clay Products Company, Vesper, Wis., have voted to dissolve the corporation chartered under the laws of the state of South Dakota and reincorporate under the laws of Wisconsin. Under the new arrangement the company expects to extend the ownership by the sale of additional stock and thereby be enabled to increase the output. It was also decided to remodel the present plant to add to the capacity. While no definite time was set for the improvements to be started, plans have progressed to a point where the cost of the improvements has been determined, which is estimated at $16,000. Financial interests from outside of Vesper have been looking over the situation for some time and it is presumed that they will acquire stock in the new corporation.

Contracts were let recently at Milwaukee for the erection of new buildings for a plant of which the Shape Brick Company is the owner. The company has quarters at 831 Merchants and Manufacturers' Bank building, Milwaukee, in charge of J. S. Barber. The new plant will have several buildings, all one story high, and dimensions of 50 by 125 feet and 16 by 200 feet, equipped with modern machinery.

A solution to the freight transportation problem has been worked out successfully in the case of the Oneida Motor Company, Green Bay, Wis., which is erecting a new plant. The brick are being hauled to the site by motor trucks from the brick yards of the Hansen Company, in the Town of Preble, near Green Bay.

A BADGER.

SIL-O-CEL Insulation

prevents heat losses from crowns and walls of kilns, boilers and all types of heated equipment.

Write for Bulletin F54 describing its advantages and application.

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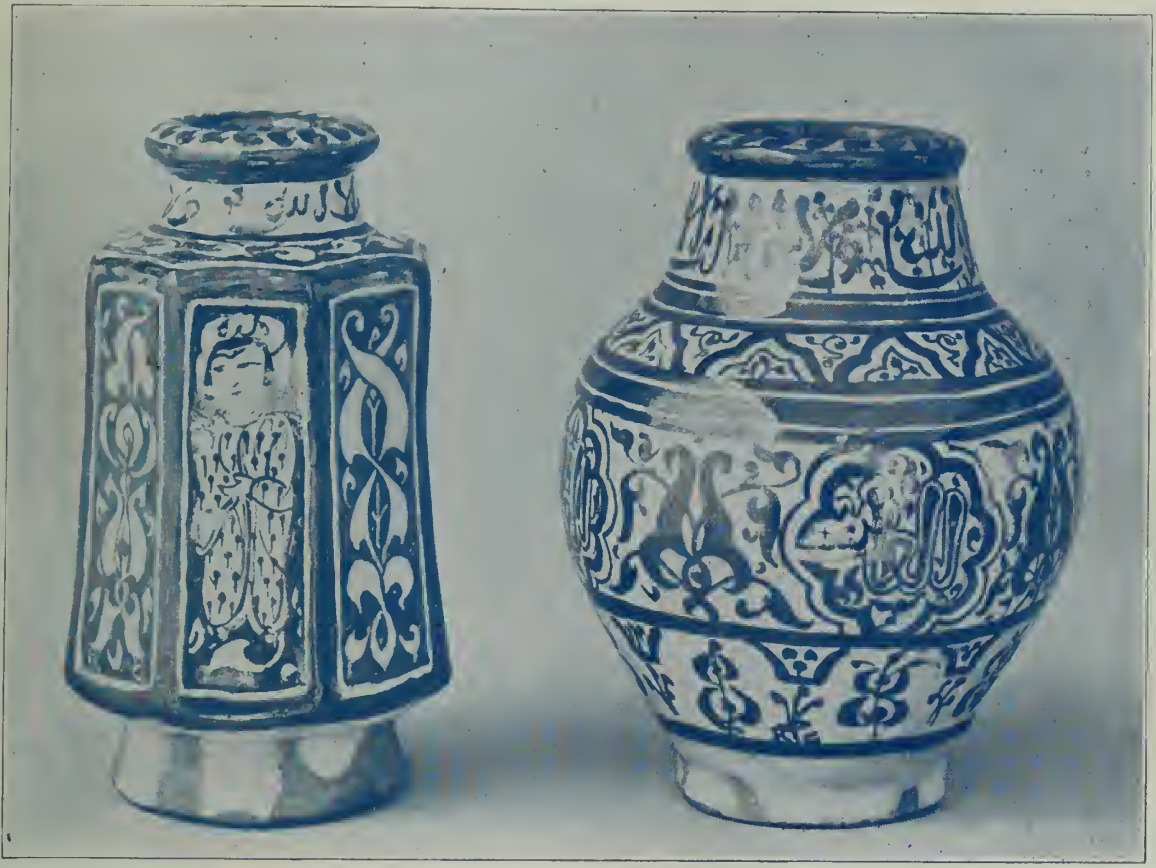
SEPTEMBER, 1920

THE CLAY-WORKER



LUSTRE POTTERY: Fine Examples of this Beautiful Ware Exhibited at Metropolitan Museum of Arts, New York City. See Page 215.

Published Monthly by
T. A. RANDALL & CO.
INDIANAPOLIS, IND.
OFFICIAL ORGAN OF THE N.B.M.A.

Published monthly. Subscription price, $2.00 per year. Entered as second class matter, January, 1884, at the post office at Indianapolis, under the act of March 3, 1879. Title registered and contents Copyrighted by T. A. Randall & Co., 1919.

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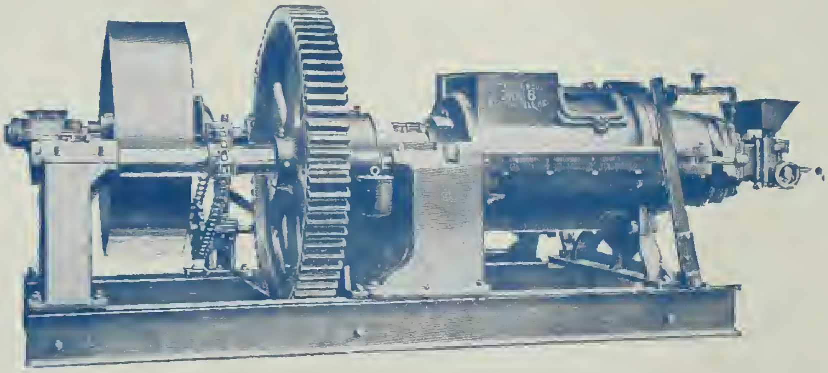
Direct Geared Machinery for Brick Plants

We do not claim to be the originators of the Single Geared Machine, the first brick machine ever built being of that type. We have, however, so proportioned the gears and pulleys as to get the best results. Some of the advantages are: Saving in Power, Quiet Operation, Greatly Reduced Repair Costs, Operation at High Speed without Damage. All very essential during these times. If weary of the vibration, hammering and breakage of an old compound-geared machine you will not regret having investigated the Steele Direct Geared Machines. We present cuts of a few machines below.



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No. 6 Machine, Side or Endcut.
Capacity, 15,000 per Hour.
A Mighty Machine.

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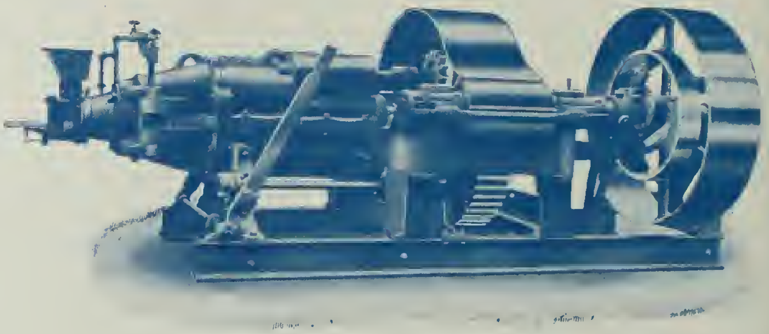
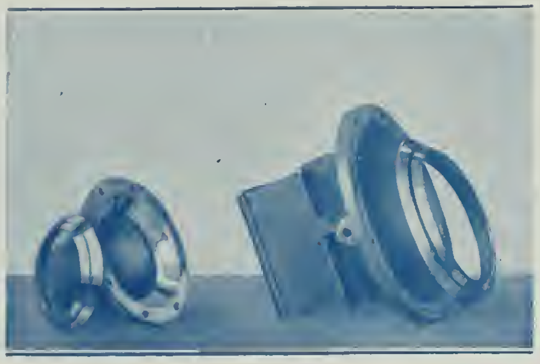
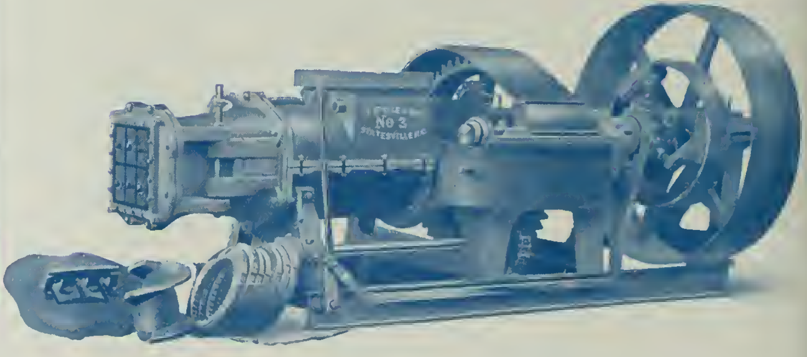




Oil Dies of Improved Type Side and End Cut.



Several Sizes of Tile and Block Machines.

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Mention The Clay-Worker.

THE CLAY-WORKER

The Official Organ of the National Brick Manufacturers' Association of the United States of America.

Vol. 74. INDIANAPOLIS, SEPTEMBER, 1920. No. 3

LUSTRE POTTERY: Some Notes on the Pottery Exhibits Shown in the Metropolitan Museum of Arts New York City, in Connection with the Fourth Industrial Arts Exhibition By Rafael Guastavino.

THE COLLECTION of decorative lustre tiles, which the Metropolitan Museum of Art has kindly invited me to exhibit at their Annual Industrial Arts Exhibition, is the result of an uncontrollable desire I had some years ago, presumably due to my Spanish origin, to reproduce, or better, say, "rediscover," the secrets of the metallic lustre process of decoration on pottery or tiles similar to that used in ancient ceramic products of Spain. I say "rediscover" for I only lately learned that this lost art has been revived at different times with varied success, by European ceramists, particularly De Morgan and others.

The early history of this ware is rather obscure but recent researches indicate that this art of decoration was already known in Egypt before the twelfth century. It probably appeared in Syria at the same time and later in Persia the development of the lustred process reached its highest perfection.

I began the experiments some fifteen years ago in a small way as my spare time would permit, making hundreds of trials during the first year, without any promising results being obtainable so that they could be duplicated the second time. However, later, several experiments indicated a possibility of development in another direction—the development of a lustre glaze, which I believe was unknown to the ancient potters, unless it was a case of mere chance or accident. Many lustre colors were then later produced with this glaze in experimental form, and later, when finally under control, applied on tiles and pottery.

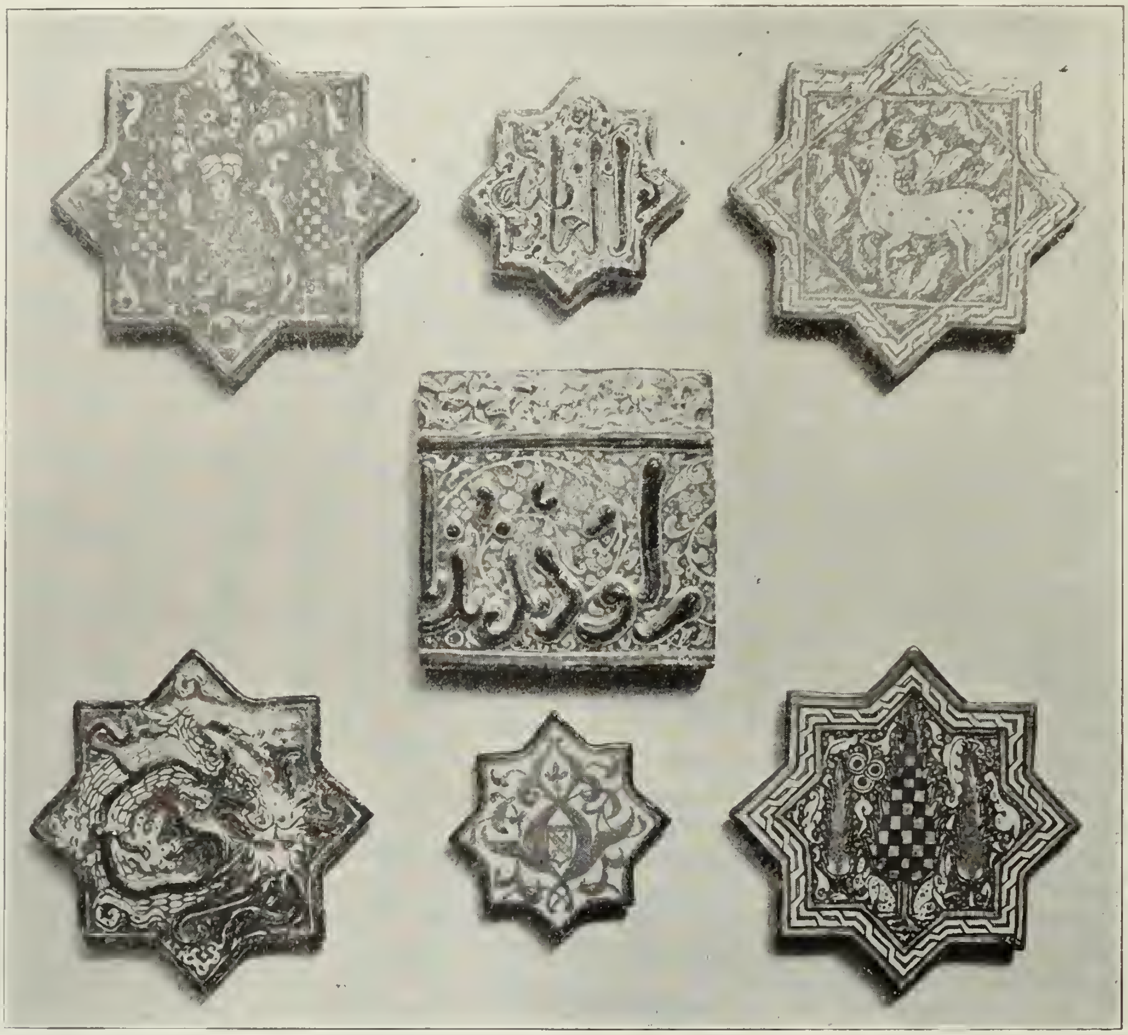
Some Beautiful Pieces of South Chinese Pottery on Exhibition at Metropolitan Museum.

About this time I was compelled for many reasons to postpone further investigations until five years ago, when I took up the original work on the elusive Spanish and Persian lustre. It would not be putting it too low to say that I made over one thousand experiments up to two years ago. I was then finally rewarded by being able to duplicate the lustre practically at will, however not always of the same shade (which is not always desirable) but under reasonable control to be practical. Being a collector in a small way of the potteries of the Near East, I have come to the conclusion that even those wonderful potters of that age were troubled with the same difficulties.

While in Cairo some years ago I made a special study of the exquisite fragments of lustre pottery, most of which were excavated at Fostat, near Cairo, and produced and assembled a small collection of these interesting relics. A careful examination of these pieces show great variations of hue or color, while in others the metallic lustre did not develop, or only partially so, which would indicate at least that the process at best was difficult of control.

The metallic lustres on old Spanish plates and of the Near East are quite different from the commercial type of lustres which can be bought already prepared and are usually fired on white china in the usual decorating kilns, but for the artist the old lustres stand in a class by themselves. They have a beautiful pearly metallic sheen or iridescence by reflected side light in addition to their pleasing color effect when viewed directly.

In closing I wish to acknowledge my indebtedness to The Metropolitan Museum of Art. In the Museum there is a wonderful collection of ancient metallic lustres from the Near East and Spain, also those of Italy by Maestro Giorgio and Deruta. These have been not only of great service to me, but the source of inspiration and encouragement particularly during my early trials and disappointments.



Glazed Ware Developed by Rafael Guastavino From Study of Persian Lustre Pottery.

A KEENER APPRECIATION OF CERAMIC ART.

Evidence of awakened interest and a world-wide realization of the need for more of the artistic in pottery comes from England in a consular story which tells of the British Pottery Manufacturers Federation recently devoting a special meeting to the subject of industrial art. It seems that the ceramic societies as elsewhere appreciate now more than in bygone days the needs to combine more of the really artistic in the designing of every day pottery. It is an idea worthy of thoughtful and active attention here for two reasons. One is that the development of the artistic in pottery is always desirable, and the other is, even ordinary chinaware costs enough to produce these days to make people more thoughtful in its selection. It is time therefore to think of putting more value into it so that it will be worth the cost. The logical path to follow for more value and satisfaction is in the development of the more artistic in both design and decoration. A stronger artistic appeal and more value is a better ideal for a goal than cheaper prices and sharp competition.

THE AMERICAN FEDERATION OF ARTS

RICHARD F. BACH, Extension Secretary of the American Federation of Arts, Metropolitan Museum of Art, New York City, has favored us with a brief report of the 11th annual convention of that federation, recently held, from which we quote:

"Suiting its text to the occasion of the Metropolitan's semi-centennial, the federation devoted its sessions this year primarily to museums as factors in the growth of American culture.

"A good sign of progress in our land is the concrete evidence of the work of this live, hard-working art organization. For eleven years this national society, consisting of 225 affiliated chapters in 40 states, besides thousands of individual members, has been building up a reputation for solid service along lines of great value to the American people.

"In all 44 exhibitions, covering painting, sculpture, textiles, wall paper, etc., etc., were circulated during the season now closing, these having reached 97 different communities. Last year there were only 30 exhibitions circulated, these reaching only 68 communities. And this success during 1919-1920 was achieved in the face of the hardest transportation conditions the country has ever faced, with strikes and embargoes without number. In addition there have been the untold obstacles of influenza epidemics and other causes to cancel listings."

Coincident with this there comes in some purely trade literature with a headline, "Where there is no vision the People Perish." One might paraphrase this and say that without vision architectural and beauty development would come to an end, and that the American Federation is a great factor in keeping alive interest in art and thus promoting that vision which makes for continued effort at beautifying the homes and home surroundings.

If you have been doing something new and effective in local advertising of brick, tell us about it, so we can tell the other fellows, and all may get the benefits.

PUTTING PROVISOS INTO CONTRACTS

A committee on contracts of the Associated General Contractors of America is advocating some interesting changes and provisions to be incorporated in contracts for building. They argue that contracting is the most hazardous industry in the country and for that reason it needs safeguarding with contract provisos. This part of the argument is good, but some of the provisos set forth leave the cost of building in such an uncertain shape that it will likely be found objectionable. Three provisions, for example, are that if the freight rate changes, the wage scale changes, or the material price changes, then the contractor's bid is to be changed accordingly. In other words, the bid would be one based on current prices, wages and freight rates, with the proviso that if any changes take place in either of these they will automatically change the figures of the contract. This is plainly an echo from the recent merchandizing practice of accepting orders on the basis that prices are to be named the date of shipment instead of when the order is received. It will not likely meet with public approval because it not only makes the final cost of building uncertain, but it opens a gap and invites the invasion of trickery. Surely there are ways to provide reasonable safeguards for contractors without dodging all the natural responsibilities which go with such an undertaking.

One of Many Exhibits of Ceramic Ware in Metropolitan Museum.

STANDARDIZING INTERIOR TILE WORK.

There is a splendid field of progress for development in the use of both brick and tile for interior work. Logically, too, one good aid to progress in this work is standardization both in the matter of material and its use. Some good work in this line is being done by the Associated Tile Manufacturer, Beaver Falls, Pa., which has recently issued specifications for tiled bath rooms and for floor and wainscots in small and moderate-priced houses. Their specifications were prepared by D. Knickerbacker Boyd, consulting architect, and are for the use of contractors, especially where the services of architects are not available. This ought to help some, not only by furnishing information for those who need it, but also because it makes for standardization and better understanding all around, and this is one of the things we need to pave the way to better and larger business in the use of clay products for interior work.

CLAY PRODUCTS BREAK RECORD.

Most Branches of Industry Show Substantial Gain in Valuation and Production, Sewer Pipe, and Fire Brick, the Exceptions.*

THE PRELIMINARY report now available from the U. S. Geological Survey for the calendar year 1919, shows that the clayworking industry is now breaking all records in point of total value of products. The total value of the clay products for 1919, according to an estimate of Jefferson Middleton is, $260,790,000, the highest yet recorded by more than twenty-five million dollars.

This record, it must be understood, was made before clay products had obtained its highest peak in point of value for there have been some increases in values since last January. It represents not only an increase in value, but an actual increase in quantity also for most of the items in the clayworking industry.

For example, the common brick production in 1919 was 4,522,667,000, an increase of 28 per cent. as compared with 1918, while the total value was $58,220,000, an increase of 50 per cent., as compared with 1918. The average selling price the country over during the year 1919 was $12.79, which is considerably below the present average selling price of common brick.

As stated in the preliminary report, common brick regained its rank as the clay product of greatest value, even though the showing is not as much in quantity as some years previous to the war.

The next largest increase in quantity was shown by face brick of which there was produced during the year 778,190,000, valued at $15,240,000. This being an increase of 118 per cent. in quantity and 150 per cent. in value as compared to 1918, with an average price of $19.58, which is considerably below the present average price of face brick.

Hollow building tile, which has been steadily gaining in use several years now, showed an increase in both quantity and value which though not as marked as the increase in brick for building purposes shows a healthy growth. The production of hollow building tile during 1919 was 2,310,450 tons valued at $16,620,000. This is an increase of 18 per cent. in quantity and 27 per cent. in value as compared with 1918, and it makes a total value in excess of the total value of the face brick product. In other words, it is the product second to common brick in total value in structural material proper, it being exceeded only by common brick as a structural material proper, and pottery and fire brick. The total value of hollow tile has passed that of sewer pipe, now exceeding it by a half million dollars.

Fire brick, as was to be expected, showed some decline because of the let up in the demand at the end of the war period. In fact, fire brick and fancy or ornamental brick are the only items in the clayworking industry to show a decline as compared to 1918, and both are easily accounted for. The fancy brick as such is yielding to the face brick product, while fire brick is undergoing the natural reaction following the urgent demand of the war period.

The total production of fire brick for 1919 was 943,942,000, valued at $36,170,000, with an average price of $38.32. These figures make a good showing when compared with pre-war days and indicate that the refractory branch of the industry is in a good healthy condition and has attained great magnitude.

The sewer pipe production for the year shows a total value of $16,170,000, which is an increase of 5 per cent. as compared to 1918. While the exact figures are not available on the quantity the indications are that the quantity did not exceed the output of 1918, but the increase in value made the total value greater.

The drain tile report shows a total production value of $10,420,000, a gain of 20 per cent. as compared to 1918, which is a good showing when we consider that drain tile continued active when there was restriction on brick and structural materials proper, except for specified uses.

The paving brick division of the industry got under way again in 1919, too, turning out a total of 485,139,000 brick, valued at $11,210,000. This was an increase of 20 per cent. in quantity and 50 per cent. in value as compared to 1918, and it shows that the paving branch of the industry was getting under way in very good shape, and by this time should be breaking all previous records.

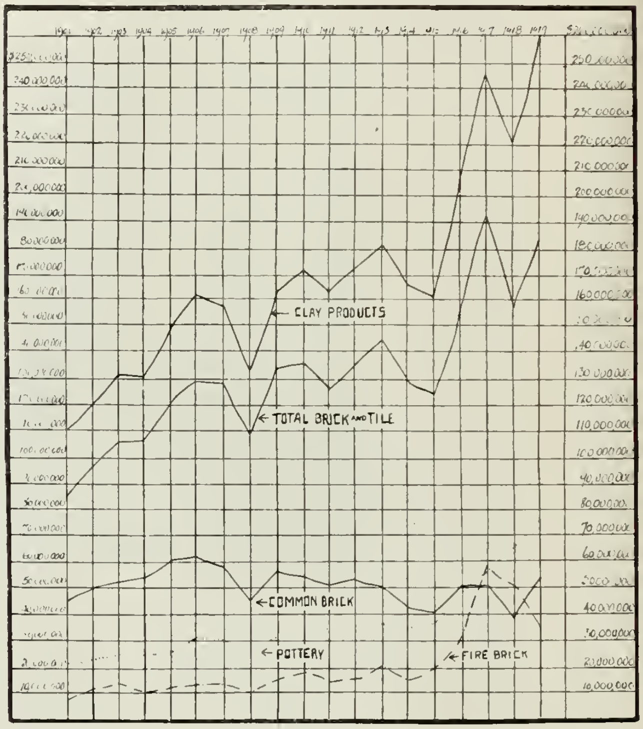


Chart Showing Value of Clay Products, Brick and Tile, Common Brick, Pottery and Fire Brick from 1901 to 1920.

According to the showing the increase in the average price unit of clay products was very modest as compared to price increases in most of the other products of the country. The figures show that common brick increased in price 17 per cent., face brick, 15 per cent.; hollow tile, 8 per cent.; and vitrified brick, 30 per cent. The average increase in all of these wares from 1916 to 1919 was 73 per cent., which admittedly is a modest showing along with other price increases ranging from 100 per cent. to 400 per cent.

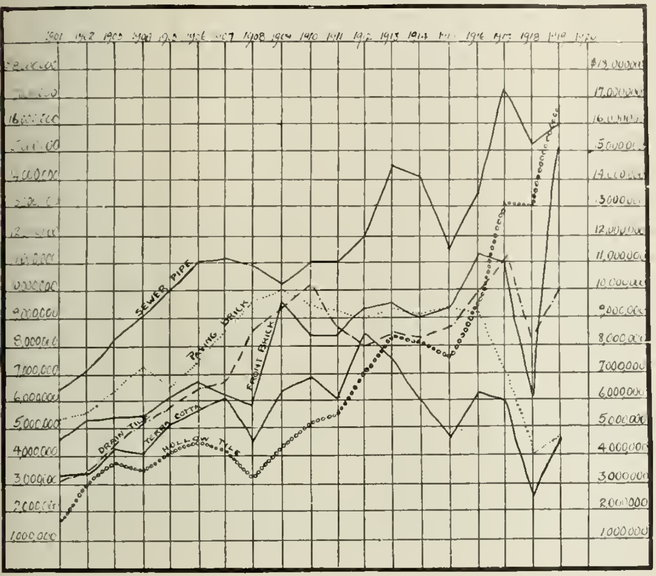
The structural clay products proper, mainly brick and hollow tile, represented about 56 per cent. of the total clay products, or a round value of $102,850,000. Engineering products, which include vitrified brick, sewer pipe and drain tile, represented 20 per cent. or a total value of $37,800,000. Refractories represented 20 per cent. with a total of $36,900,000, while miscellaneous items constitute 4 per cent.

The pottery production for the year was $76,140,000, being an increase in value as compared to 1918 of 19 per cent.

FEATURING FACE BRICK.

THE LATEST PUBLICATION of pretense and magnitude issued by the American Face Brick Association with headquarters at 110 S. Dearborn Street, Chicago, is a manual of face brick construction which includes such a number of colored pictures and plan sketches of brick homes as to be properly classified as a plan book. It also carries a great fund of detailed practical information about face brick construction which will make it a valuable reference book for the architect and for the building contractor as well as a plan book for promoting the use of brick and hollow building tile.

This publication promises to do more in the featuring of face brick than anything which has gone before it and it tells the story of brick from the early beginning to the present day.



Statistical Chart of Sewer Pipe, Paving Brick, Front Brick, Drain Tile, Terra Cotta and Hollow Tile for Last Twenty Years.

The announced purpose of the book is not only to show how perfectly brick as a building material meets all the fundamental requirements of building, but also to serve as a manual for the master carpenter builder in offering various designs and plans of face brick homes and in pointing out the practical methods of constructing either the solid brick, hollow tile or the veneered wall.

In reviewing the history and the development of brick in America it is pointed out that up to about 1880 there was no general attempt to use brick to the best advantage. In other words, there was no specific development of the face brick idea prior to that time. For the most part the brick building of that period was confined to the use of common brick for ordinary construction or for backing stone faced walls. From 1880 up to the present date, however, the record shows a growing taste that has demanded and secured artistic effects in the brick walls by the use of specially manufactured face brick which, in a bewildering variety of beautifying color tones and textures, have made possible much greater variety and beauty in architectural design and execution.

It is desired here to supplement the historical sketch in the new manual with some figures of the actual growth and development of the face brick industry taken from the printed records of the U. S. Geological Survey. This record does not show when interest was awakened in the subject of face brick specifically. The first separate classification of front brick from common brick in the official figures was in 1895. Prior to that time what was termed common and pressed brick had not been separately classified. The report from that day to most recently available figures for front and face brick is as follows:

Annual Front and Face Brick Production.

Year	Quantity Thousands	Value
1895	339,204	$4,399,367
1896	270,335	3,290,941
1897	310,918	3,855,033
1898	295,833	3,572,385
1899	438,817	4,767,343
1900	344,516	3,864,670
1901	415,343	4,709,737
1902	458,391	5,318,008
1903	433,016	5,402,861
1904	434,351	5,560,131
1905	541,590	7,108,092
1906	617,469	7,895,323
1907	587,943	7,329,360
1908	584,482	6,935,600
1909	816,164	9,712,219
1910	697,857	8,590,057
1911	724,911	8,648,877
1912	814,007	9,455,297
1913	827,665	9,614,138
1914	810,395	9,289,623
1915	855,668	9,535,536
1916	1,002,762	11,464,614
1917	757,618	10,391,368
1918	356,394	6,095,120
1919	778,190	15,240,000

Along in 1905, or 15 years ago, when the item of front brick had increased a total annual value to over seven million dollars, the annual review of this item by Jefferson Middleton, for the U. S. Geological Survey, in speaking of the increase in production said: "This great increase is probably due to the erection of a large number of fine structures, such as apartment and office buildings, which require large quantities of front or face brick. Since the brick stands transportation to points at considerable distances from its place of production the point of consumption cannot be definitely defined."

From the early records, back in 1895, when the quantity of front brick production was 339,204,000 there has been a steady growth in the quantity of face brick produced. Sometimes there will be a little back set for a year here and there, but the quantity of production climbed persistently and reached its pre-war peak in 1916, when it passed the billion mark in quantity. At the present rate of growth another decade should see two billion or more face brick produced per year, for there is a noticeable tendency among a number of brick producing plants to make a larger percentage of their product so that it will class as face brick.

Commenting upon the production in the peak of 1916, Jefferson Middleton, of the U. S. Geological Survey, says that the manufacture of front brick is the most widely distributed branch of the clayworking industries, except that of common brick. It being at that time reported from forty-one states with Pennsylvania, Ohio, Indiana, Illinois, Kansas and Missouri being big centers of production in the order named.

The two features about the newest publication of the face brick people which makes a special appeal to The Clay-Worker are, its strong featuring of pictures and plans for homes, and its manual of practical details of brick construction.

For years The Clay-Worker has been pleading for the industry to take up more extensively the picture and plan book idea, which has been so industriously employed by the lumber people of the country to promote the use of their material in building operations.

Along with it has gone the plea to concentrate upon home building and the modest structures because here is where we have the need for the effort at exploitation. Brick and other clay products just naturally find their way into larger building undertakings, but in the building of homes there has been a neglect of brick largely through lack of understanding its possibilities and economy for modest building operations.

One of the strong points about the series of pictures and plans shown in this new book is in that they are pictures and plans of practical houses for the average class of people and there is a great number and variety of them so as to suit widely varying tastes. This is good work and it is a work that the whole clayworking industry needs to concentrate upon more that we may get clay products properly introduced for home building and for farm buildings generally.

The manual of construction is particularly valuable because of its breadth and liberality in portraying the several various forms in which face brick can be used, that is solid brick walls, brick veneer, and hollow tile backing, and brick veneering for frame walls. The descriptive matter here and the illustrations of details and sketches will not only prove of practical value for contractors and builders, but the publication of this work as a whole will serve materially to interest and instruct the general public in the matter of construction details in the use of clay products. That is one of the things we have great need for today, instructing the general public so that they may understand better and even take a hand in the building with clay products as in the past they have taken a hand in building with lumber.

This new publication of the American Face Brick Association will not only serve a good purpose in featuring face brick and awakening the public interest in the finer features of brick work, but it will help the cause of brick and clay products generally in the public mind for the everyday construction of homes and other modest buildings.

A BIT OF AMERICAN BRICK AND MACHINERY HISTORY.

Back some years ago in reviewing the clayworking industry Jefferson Middleton of the U. S. Geological Survey dug up a bit of history of that famous Hudson river region. He credits James Wood, an English brickmaker, with starting the business back in 1817. Other pioneers mentioned in the Hudson river field were the Allisons and David Munn. Also credit is given to A. Ver Valen for inventing in 1852 a brick machine that gave great impetus to the industry. Can some of the present-day pioneers in the brick and brick machinery industry furnish us with other early data about the inventing of machines and labor-saving devices for clayworking? We have had plenty of references to the ancient history of brickmaking, but not enough digging up and recording of the pioneer development in the industry in the United States.

Home building can still be financed and to aid this some of the big insurance companies are turning a fund in this direction. The main handicap is the higher cost values which makers of long time loans do not like to accept as permanent. As a result the home bulider must have a larger percentage of the cost requirements than in previous years to finance the undertaking.

THE PROGRESS OF BUILDING TILE.

THE IDEA of hollow building tile had its inception in the desire for fire-proofing, and had its first development along with the development of sky scraper buildings. It is really a modern product in its present state though tile and hollow blocks were used long ago for special purposes.

The first record of hollow building tile was under the name of fire-proofing. Back in 1894 the U. S. Geological Survey in compiling the statistics of the clayworking industry listed fire proofing as a separate item with a total value of just a little more than a half a million dollars. They continued to list this item as fire-proofing until 1903, when for the first time the item of hollow building tile or blocks appeared in the statistics with a total value of a little more than a million dollars. It and fire-proofing together representing a total then of nearly four million dollars. Some idea of the growth and development of hollow building tile from that date to the present may be had from the following tabulated figures taken from the U. S. Geological Survey reports:

Hollow Building Tile and Fireproofing Production.

Year	Value	Year	Value
1905	$4,098,793	1912	$7,174,148
1906	4,586,538	1913	8,385,337
1907	4,250,619	1914	8,385,337
1908	3,168,037	1915	7,800,938
1909	4,466,708	1916	9,942,912
1910	5,110,597	1917	13,255,433
1911	5,660,172	1918	12,980,000

Commenting upon fire-proofing and tile (not drain) in the U. S. Geological Survey review of 1905, the statement was made that the production has varied some from year to year with the probability of large increases in the future.

The prediction at that time was evidently based upon the awakening to the need of fireproof construction and with fire prevention largely in mind. As a matter of fact there has not only been development of hollow tile as a means for fire prevention, but during the last few years it has entered as an important factor in general wall construction and at the present rate of growth it promises to attain a mighty conspicuous place in the clay products for general structural purposes.

The pre-war peak period was reached in 1917, with a total value of hollow building tile of $13,255,433.

It was here that, too, for the first time on request an effort was made to obtain statistics of the quantity as well as the value of hollow building tile, and the results showed a total for the year of 2,590,028 tons of building tile marketed in 1917.

What would have happened by this time had not the war intervened to check ordinary building operations no one can say, but it is likely that the happenings during the next few years in hollow building tile will be very striking. This is because it has proven its worth, has developed an awakening to its extensive possibilities, and it has a wide field for development, not thought of a few years back. The wide field in mind is a new open field aside from the past uses in wall constructions and particularly for big buildings. It is the field of modest home construction and of probable uses for garages and for the many outbuildings on farms where heretofore hollow building tile was hardly thought of.

There is an awakening here now which promises big doings and involves probably a new order of business in connection with hollow building tile. A business which will include the enlisting of the many retail dealers in lumber and building material in the promotion and distribution of tile in the agriculture districts for general construction work. Not only are plans under way for great promotion along this line by the tile people themselves, but organizations of retail dealers are now taking a keen interest in the subject and at the various association gatherings this winter this will probably be one of the live subjects for discussion, and this in turn will probably mark the beginning of a new era in hollow tile and the wonderful possibilities for its development.

NOTES FROM DIXIE LAND.

DESPITE LOWER prices on both cotton, lumber and sugar, prosperity is good in Dixie land, and strong markets in all lines are anticipated before the cold days of winter. September opens active in building brick, pottery and clay mining industries at Memphis and country points. Things were a little backward in the spring and summer and this portends that they will be quite as active in the autumn and early winter. A good percentage of the construction work is brick. Deliveries are improving. Sewer pipe and terra cotta trade is brisk and the demand for fancy brick and finishing goods is quite heavy. The towns and cities in the delta of Mississippi South, those in West Tennessee and those in Arkansas are quite active.

R. E. Montgomery, Jr., is preparing to erect at 1612 Eastmoreland, Memphis, a six-room brick bungalow to cost about $8,000.

Numerous new fronts are being put in on Main street, Memphis. It seems that improvements on one store or place of business suggest another. Main and Madison, during the last two years, have been almost rebuilt in handsome new fronts. Much plate glass, much white tile and white brick are being utilized in this way. In some instances a large amount of terra cotta work is being used in decorative work or on interiors.

Bornman Lumber Co., at Clarksdale, Miss., are handling materials in the delta country in the building supply line.

W. T. Burt Lumber Co., Clarksdale, Miss., are also active in the building material lists at Clarksdale, Miss.

Walter Harris is to erect a one-story brick veneer residence to cost $8,000, at 1612 Eastmoreland street, Memphis.

A permit has been issued at Memphis to Estes, Williams & Ragsdale, Memphis contractors, for the erection of the new Carpenters' Hall, to be located at 210 North Second street. The building will have a large assembly hall on the lower floor.

A group of business houses, burned at Parkin, Ark., last week, will be restored with brick buildings. A. B. Cole & Son, of Memphis, are among those who will build. The loss to the several stores aggregated $100,000.

At Senatobia, Miss., several brick buildings are to be erected at once. A. L. McCormick and others are among those making improvements in the business section of the town.

Architects Jones & Furbringer, Memphis, will erect a two-story brick residence, to cost $5,000, at 209 Madison avenue, Memphis.

Rapid progress is being made on the new warehouse addition of the Fischer Lime and Cement Co., Walnut street, Memphis, and it will be ready for occupancy in about thirty days, doubling the capacity of this well-known company, which handles sewer pipe, fire brick and other building supplies. Just across the street on Walnut this company is building for the Continental Piston Ring Co. a handsome brick building with vitrified brick front and large floor space. This is the largest piston ring manufacturing company in the United States, and manufactures stock for the automobile trade.

Fischer-Herbert Brick Co., at Memphis, Tenn., is completing extensive improvements in their plant and will manufacture common brick on a large scale. New kilns, dryers and conveyors are being installed.

S. Malkin will erect a one-story brick veneer residence at 1299 Peabody, Memphis, estimated to cost $9,000.

Work has started on the new passenger station of the Illinois Central depot at Newbern, Tenn., under the supervision of W. H. Spradlin, of Fulton, Ky. The new structure will be of brick.

F. R. Thomas Clay Products Co., Central Bank Building, Memphis, are doing a carload business in clay products from leading pottery and clay industries.

News is received of the death of Chas. R. Coat, supervising architect of the new Charleston, Miss., Bank and the new Thomas Bank at Moorhead, Miss., who died at an infirmary at New Orleans on Thursday last, following an operation for appendicitis. Mr. Coats, one of the best known architects in the South, was born in England in 1856. He followed his profession for a good many years in Louisville, Ky.

Large construction work under progress at Memphis now is the Memphis Packing Co., the Quaker Oats Co., the Iten Biscuit Co. and two large public school additions, the Continental Piston Ring Co.'s new factory and numerous stores, houses and warehouses. Brick and terra cotta, tile and other clay materials figure more or less in all of these. The Bry-Block Mercantile Co. is erecting a six-story addition on the Front street side, E. J. Pearson, contractor. The American Snuff Co. is erecting a large addition in North Memphis.

DIXIE.

CLAYWORKING IN MOROCCO.

RECENTLY THE British Government Board of Trade Journal gave a brief interesting story of the Moroccan pottery industry which consists in the main of making bowls, jars, tile for roofing and floors, plates, dishes and small lamps. A brick is also made for building purposes but the feature of their clayworking industry is in pottery lines.

The report says that the fuel used in firing is a dwarf palm, and olive stones and skins and similar refuse from the oil presses. The colors employed are blue, green, yellow and black. The blue dye is imported from England, the green is obtained from copper and lead, the yellow from an earth obtained from near Fez, and the black is obtained from earth nearby. It is claimed that the secret of the light blue dye which was formerly used and is seen on old tiles and pottery has been lost.

The glaze is made from lead, pewter, copper and a white sand. There is an interesting story of how they obtain the lead by salvaging the lead paper used for packing teas. The pewter is obtained by melting down old pewter teapots and the copper by melting down old copper cooking utensils. The gathering and salvaging of junk of this kind seems to be quite an industry in that country and it is from this that the glazes are obtained.

Most of the work is hand work but some machines are being introduced, especially for making large tile.

Considerable quantities of square tile for floors and walls ornamented from designs copied from old Moorish tiles are manufactured and exported to France, while many others, mostly plain, are used locally as are most of the dishes and jars, except those specially decorated and sent abroad as works of art.

In the development of a clay property is one place where thorough analyses and expert advice should be had early in the game, for the cost of this is small compared to the cost which may result through ignorance and lack of understanding.

BOOSTING CLAY PRODUCTS THROUGH PLAN BOOKS.

The Merits and Advantages and What the Various Clay Products Associations are Doing to Further the Use of Same.

IN DISCUSSING THE educational exploitation of hollow tile in The Clay-Worker for May it was properly pointed out that a strong and commendable feature of the exploitation work in hollow tile is in the following up of their advertising with plan books. Plan books really constitute the most effective vehicle for the exploitation of a building material. This has been proved so often and so thoroughly that the remarkable thing about it is in that the clayworking industry has been so slow in taking it up. There is an explanation, of course. The explanation is that the clayworking industry has always catered to and sought the co-operation of the architect. There has been a lurking apprehension that the use of plan books for exploiting the product might jeopardize the friendly relation with the architect. Now, however, we are awakening to a realization that this is not the case, that plan books help instead of hinder co-operation with the architect and that the architect and the clayworkers may co-operate in this kind of work to their own mutual advantage.

A recent illustration of the effectiveness of visualizing the complete structure as a means of understanding and selling prospects was furnished during a ship-by-truck parade in one of our important cities. In this parade the truck taking the prize of $100 for the best decorated truck was the truck of a retail lumber dealer, and its decorations were nothing more or less than a model cottage mounted on a platform built up on the truck bed and covered with sod into which had been planted a couple of shade trees giving a home effect with the little house and its lawn.

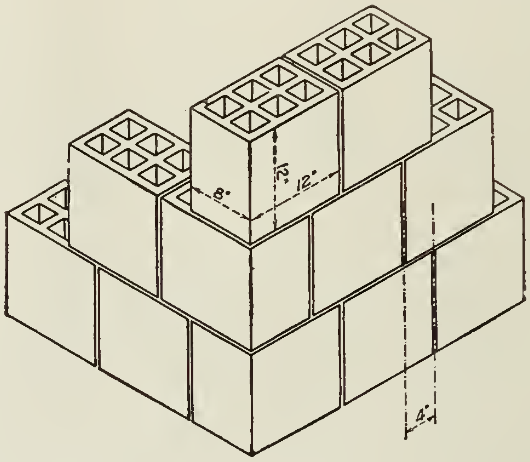
The lumber people have used the plan book idea for exploiting their product for more than a quarter of a century now, and it is to this agency they can trace much of the prestige for their product and a lot of the active building that has been induced through their exploitation. There is no question now but what the clayworking industry can do the same thing in better shape, with better results to the builder, because when he is induced to build a home of clay products he has a permanent investment that gives him satisfaction long after the cost has been paid and forgotten.

As stated above, the plan book idea has been with the clayworking industry quite a while, a decade or more. Now and then efforts have been made to introduce it in somewhat wider form. The Building Brick Bureau took up the idea and did some splendid work of this kind with promise of future progress of importance which conditions and circumstances failed to materialize as they should have been. Various other individual and concerted efforts have been made, all of which have done some good, but in every effort until recent years there has been an air of hesitancy about pushing them in a general way that should not have been and probably will not be any more.

There has come now a realization that the clayworking industry may consistently use plan books, and as a consequence this and the realization of the value of such a vehicle for promoting the use of clay products in building, the work of pushing the product with plan books is going forward nicely now with promise of great results. It is almost an ideal time for this class of exploitation to be more than usually effective if it is carried out logically and rationally and on a scale in keeping with its possibilities.

Various organizations of the clayworking industry are now concerning themselves with the promotion of their product through using plan books, especially as a follow up to widespread advertising. As was mentioned in a previous article, the hollow tile people have been active in this with a couple of splendid books to their credit. The American Face Brick Association has been at work on the same idea for some time and has turned out some high grade literature of this class, and now comes also the Common Brick Association of America with a house plan book entitled, "Brick for the Average Man's House," which is intended to show graphically the possibilities of common brick in the moderate priced home. These are splendid signs of the times and of progress that should have been made earlier in the exploitation of clay products, and that we now hope will meet with such encouraging success that in the future plan books of clay products will be as plentiful as lumber plan books in the past have been. That they will be better and more appealing there is no question.

There is practically no limit to the things which could be said or written about the get up and use of plan books in the exploitation of clay products. An effort will be made here to set out only a few of the more important thoughts which merit attention at the present time by those in charge of the work.



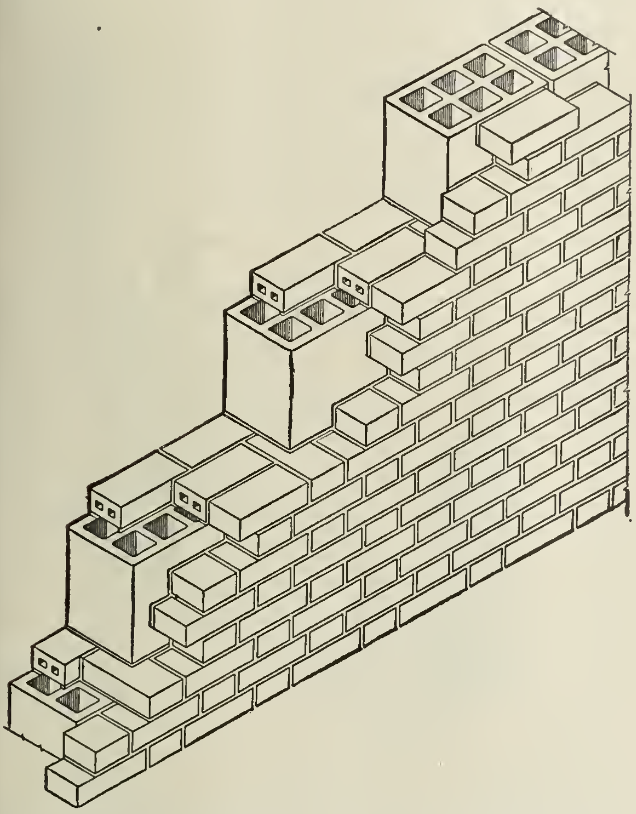
The Usual Corner Bond for End Construction Tile in 8-Inch Wall When Surfaced with Stucco.

The first thing it is desired to advance is a plea for harmony in the industry. For those in charge of this work to keep in mind the fact that friendly rivalry between the different clay products is a good thing to stimulate progress, while antagonism and unfair competition through subterfuge hurts more than it helps. There is plenty of good argument that can be used in favor of each class of clay products, each have their peculiarities and points of merit which should be brought out and exploited to the end that the prospective buyer may be properly educated and can then choose among them as circumstances and his judgment indicate which is better for his particular needs.

One of the shortcomings in argumentive exploitation in the past has been the indulgence in what might be termed "bum arguments," the advocation of a given material for purposes which it was not best suited, and the general condeming of rival material for the simple sake of temporary sales gain. This is a thing we hope the clay products industry will avoid. There are plenty of good things to be said about every clay product made, and there is plenty of room to extent the use of all. So in the work of exploiting there should be co-operation between the different divisions, and a friendly rivalry to stimulate research and activity, but no back biting antagonism.

Now as to the plan books and their get up. There is a world of room for interesting variety and attractive display and also for the putting forth of specific information about the details of specification and use of the products offered.

Taking homes as an example of pictorial and plan exploitation, there are two broad lines which suggest themselves as needing some intermingling. One is the furnishing of pictures and plans of low cost houses, modest homes, the building of which is generally supervised either by the owner or the contractor. The other is the picturing of the more elaborate homes where the architect would be called in that his knowledge and skill may insure beauty of outline and correctness of detail in construction. Both these can be combined in the same plan book, and it may be taken for granted that the man building the more elaborate home will either seek architectural co-operation through the organization putting out the plan book, or through consultation with some architect of his acquaintance. In other words, the architectural services will be called in where they are required.



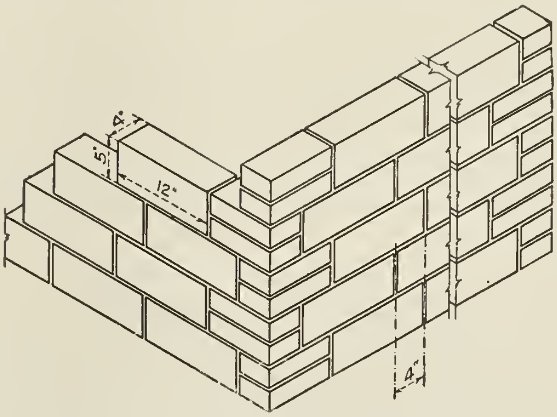
Flemish Bond with 8-Inch by 12-Inch End Construction Tile, Cut So that Bond Occurs Every Fifth Course.

A feature that all of those branches of clayworking industries getting out plan books should give special attention to is that of diversity and beauty of appearance in the face of the structure.

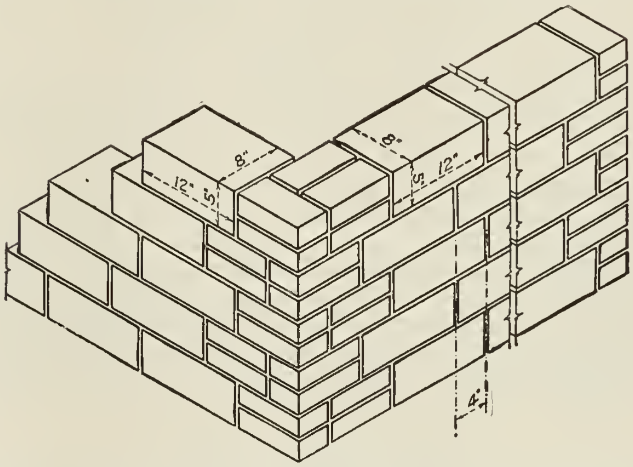
This is one feature that the hollow tile people are just now waking up to properly, that is, a realization of the possibilities of decorative architectural effect with the face of hollow tile itself. Plan books from this organization in the future, while they will likely contain and include stucco finish and brick veneer, should logically portray as a large feature the outer face of hollow tile. There are many interesting possibilities in tile face combinations which we feel sure will be developed in the next few years.

The face brick people naturally run to the more artistic features because that is the prime purpose of their product, to furnish face beauty. For these reasons and because of the beauty and wide variety of their product we may expect to lead the procession in face beauty and architectural features.

This does not mean, however, that there are lack of beauty possibilities in common brick or that the common brick showings will be so overshadowed as to discourage interest in them. As a matter of fact there is a wonderful range of possibilities in common brick for decorative effects. While the common brick does not shine up individually alongside its aristocratic brother the face brick, it has its elements of beauty which when properly handled make a splendid showing. There is not as much variety and possibilites in laying up and bonding as in face brick but in the use of soldier courses, paneling and various unique departures from straightway laying the monotony of the plain brick wall can be broken up into many interesting effects. Studies and experiments along these lines should do much to add beauty and selling strength to the common brick offerings.



Common Brick Used for Corners and Openings on Side Construction, 4-Inch Wall.



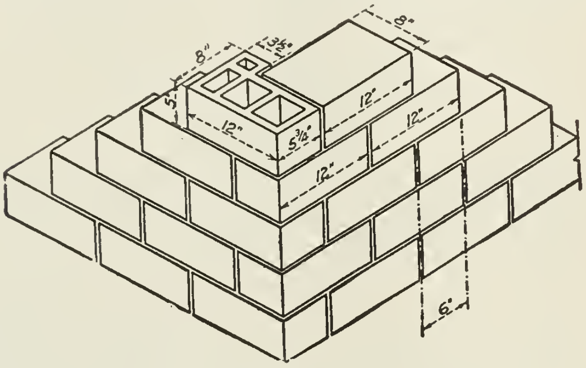
Bond on 8-Inch Side Construction Tile Wall, Using Brick for Corners and Openings.

In fact, this idea of variety in structural details to vary wall monotony is an interesting thing to be kept in mind and experimented with in every class of clay products. It is the one feature of house planing which seems to offer the greatest possibilities for the exercise of originality in the development of new and attractive outlines.

It is the picture appeal and the plan outline which first attracts and interests a prospective builder, so naturally this should be the strong feature of plan books. It is not the only thing however. It should be followed up by plans and sketches and details of construction for instruction and reference.

The Hollow Building Tile Association has made a splendid start in this line of work of exploiting in their book on "Hollow Tile for the Home." They not only give instructions for specifications in detail, but they had architects draw details of various wall constructions touching openings, floors, corners, etc., and they show a series of different types of wall construction, including the use of hollow tile with stucco outside finish, hollow tile with brick veneer outside, hollow tile making its own face, using brick for corners and openings, and hollow tile face exclusive using special tile for corners and openings.

This is good work that both the tile and brick people may do even more of. In other words, the picturing of special ideas and departures from straight wall work in building is not enough of itself, there should go with it sketches showing details of construction for obtaining the effects of these interesting variations. These may not seem essential at first, but it is a known fact that they help complete the educational instruction of the prospective builder and bring home to him that understanding which rounds out his satisfaction and helps make sales.



Bond on 8-Inch Side Construction Tile Wall Using Special Corner Tile.

There is today before the clayworking industry a wonderful opportunity to push the sale of clay products through the use of plan books, and from the way various organizations in the industry are going after the matter right now it looks like they are going to make something of the present opportunities.

THE FIRE-SAFE FLOOR.

ONE OF THE RECENT developments of progress in the building material world is in the renewed introduction of steel lumber as a floor joist material in competition with wooden construction. This is of special interest to the clayworking industry because it brings out the idea of safeguarding the home against fire by building with fire-safe material. The home with brick walls and wooden joists in the floor and wooden framing in the partition has always carried the objectionable features that the inner part could be destroyed by fire and the building ruined. These features have prevailed largely because of the cheapness of wooden joists and partition material and because there was no substitute offering which it was easily practical to use under everyday conditions.

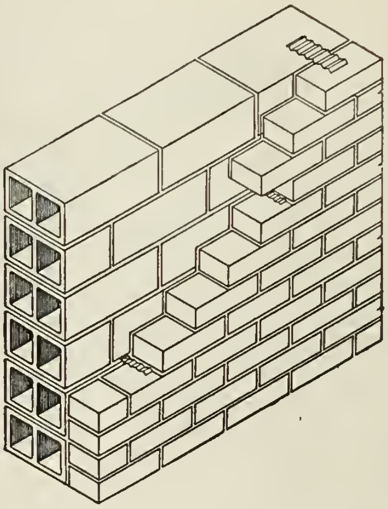
Now we have steel lumber making a bid for recognition in a form which shows interesting possibilities. There has been offered a shaped steel joist member which it is claimed can be used without burdensome cost in even the modest home building and offers the advantage of making the floors of the home fire-safe.

Gilbert Canterbury, in discussing this product and the subject in Building Industry, says:

"Without doubt a large part of the blame for inflammable home construction may be charged to the high cost of fire-safe construction in the past. Now, however, the extra cost for fire safety is negligible. The greatest contributing factor to this changed condition is steel lumber.

"Steel lumber was first introduced to the building industry in 1906. The first structure erected with the material was at a residence in New York state. Early manufacturing methods made the material high priced at first, and its use in residence construction was quickly abandoned. Larger operations, however, seized upon it, and as a result many thousand of our finest office buildings, schools, apartment houses, theaters, churches, warehouses, etc., have been built with steel lumber during the last few years.

"From modest beginnings as the special product of one manufactory, steel lumber has advanced to its present position as the commodity of an industry. It is being produced as mill sections in enormous quantities and is distributed broadcast through structural steel fabricators and building material dealers. Improved manufacturing methods and quantity production has cut down the price until now, coupled with the economies afforded in time and material savings in construction, fire-safe buildings are brought easily within the reach of the average individual."



8-Inch Tile Wall Side Construction with Brick Facing.

CONCRETE BRIDGES FAIL.

Various counties in the northern part of New Jersey have built a good many bridges over small streams, of concrete. Late in July a number of severe electrical storms swept over the region, accompanied by heavy rain.

Three of these bridges failed in one night under pressure of high water on the same streams that are spanned with wood bridges, which withstood the flood.

Last spring another concrete bridge failed under pressure of high water, making four in all that have failed within a few months. Apparently concrete is not adapted for bridge building where streams are likely to rise suddenly.

The official name of that hollow clay building unit is now "Hollow Building Tile." Get the habit of using this term and help avoid confusion.

Written for The Clay-Worker.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.

BUILDING OPERATIONS for September are showing quite a gain over the month of August, and indications are that the contractors and brick manufacturers will be fairly busy for the next two or three months. There was a slump in building all over the state during the month of August, and in the opinion of Edward C. Kerth, city building inspector for Evansville, this was due to the fact that banks and building and loan associations tightened up on their loans to some extent. There is a feeling now that the situation is going to improve and that there will be considerable building from now until bad weather sets in late this fall or early in the winter, and contractors and building material men also believe that 1921 will witness a great deal of building. Many people who had contemplated the building of homes this year have postponed the work until later on, in the belief that building materials would get lower. They have now come to the conclusion that the present prices are not going to get any lower this year, and perhaps next year or even the year after that, and as a result many of these people are making their plans to go ahead and build.

There has been a great deal of commercial building in Evansville during the past season, such as the building of additions to manufacturing plants and the like, but the number of residences built has not been large. In fact, Evansville and other towns in southern Indiana, as well as towns in southern Illinois and western and northern Kentucky, have felt the shortage of houses very acutely during the past year. As a result, rents in Evansville have steadily gone up, and the situation, instead of growing better during the past month, has become worse. Clarence P. Hammerstein, secretary of the Allied Building Contractors' Association of Evansville, said the other day that unless more homes are built in that city soon many people will be forced to live in tents or out of doors.

One of the biggest pieces of construction work that is now going on in Evansville is the new Victory Theater, at the corner of Main and Seventh streets. The contract for this job was let some weeks ago to the M. J. Hoffman Construction Co., of Evansville and Indianapolis, the contract price being $692,000. Construction work has started on the theater and will be pushed. The building will be used for both a theater and hotel and the hotel will be named the Hotel Sonntagg, in honor of Marcus S. Sonntagg, banker and real estate man, of Evansville.

The plant of the Crown Chair Co., at Evansville, has been completed. Work is in progress on several new factory additions in that city. The new building of the Van Pickerill Hardware Co., at the corner of Fourth and Sycamore streets, has been completed. A company has been organized to build a new theater at the corner of Sycamore and Third streets, that will have a seating capacity of 3,500 or more. Plans for the building have been drawn and it is expected that the contract for the building will be let soon.

The additional story to building No. 2 of the Globe-Bosse-World Furniture Co. has been completed by Griesbacher & Dubber, the contractors. It was necessary to raise the entire roof of the building to construct the second story.

A new building has been constructed over the crusher at the plant of the Standard Brick Co. in Evansville. The new building will take care of the rough clay brought in for refining purposes.

During the past month the Standard Brick Manufacturing Co. has received many calls for brick from all parts of the city and the company also has shipped a great many brick to points outside of the city, as well as the state. In the opinion of those who are in position to know, the building situation is brighter now than it has been for several months past. For some time past there was a shortage of cement, but during the second week in September the shortage in a large measure was relieved.

The new plant of the Quinwin Brick and Tile Co., at Sturgis, Ky., a few miles south of Evansville, is nearing completion. This company is composed entirely of Sturgis capital, and the capital stock is $50,000. The plant completed will cost in the neighborhood of $75,000. The company will manufacture brick, drainage tile and building tile. The plant, when in operation, will employ about fifty men. J. W. Quinwin is the manager of the company, W. W. Wynns is president, while Fred Alloway is vice-president.

George Underhill, nineteen years old, whose home was at Birdseye, Ind., was killed a few weeks ago while working at the plant of the Southern Indiana Clay Products Co., at Huntingburg, Ind., when a lodge of clay fell on him. He was killed instantly. The body was shipped to Birdseye for burial.

Henry C. Kleymeyer, president and general manager of the Standard Brick Manufacturing Co., at Evansville, has returned from an extended trip through North and South Carolina. He reports he had a most delightful time. Just recently Mr. Kleymeyer, Mr. John Andres, who is secretary and treasurer of the company, and several other of the public-spirited business men of Evansville, took an active part in the second boosters' trip that was run out of Evansville on September 15. Several towns in southern Indiana and southern Illinois were covered during the day. The train of boosters was in personal charge of Eugene H. Hyman, secretary of the Evansville Chamber of Commerce. The first boosters' trip given by the Evansville manufacturers and retailers was given on August 3, and it was a great success.

Brick manufacturers will have exhibits at the second annual Evansville Exposition, that will be held at Cook's Park, in that city, from October 4 to 16. The buildings at Cook's Park now are being erected and the booths are being sold rapidly. It is believed the exposition will bring a large number of visitors to Evansville during the twelve days that it is given. The exposition that was given last year was attended by more than 100,000 people.

Leander G. Holmes, sixty-four years old, a director in the Portland Forge, Foundry and Machine Co., of Portland, Ind., and of the Lehn Tile Factory, at Lehn, Ia., died in a hospital at Battle Creek, Mich., on August 26, where he had gone for treatment a short time before. Mr. Holmes was born in Wells county, Indiana, and located in Portland in 1872. He is survived by his wife, one son and two daughters, one of the daughters being Mrs. Jay Griffin, of Indianapolis.

A. HOOSIER.

HOW DO YOUR COSTS AVERAGE?

Back ten years ago when a census report was made of the brick and tile industry the costs of production were divided substantially as follows:

	Per cent.
Raw material	31.3
Wages	49
Salaries	7.2
Machinery, advertising, repairs of building and machinery, insurance, traveling expense and other sundries	12.5
Total	100

We may presume that fuel was included in the raw material item in these calculations. Taking it the same way, counting fuel in with raw material, how does this division compare with your figures? Try it on your cost totals and tell us how it comes out.

WHAT ADVERTISING WILL DO FOR THE TILE DEALER.

By ALBERT L. GALE

Advertising Counsellor to The Associated Tile Manufacturers.

LAST NIGHT I slept in a Simmons bed after slumber had been invited while reading in a Karpen chair.

This morning I arose and stepped upon a Whittall rug, and had my bath in a Standard Sanitary tub in a bathroom whose floor and walls were clean and beautiful because of the use of tile.

Then I shaved with a Gillette razor, using a Colgate soap and a Rubberset brush. My face was smoothed with a Mennen lotion, throat cleansed with Listerine, teeth scoured with Pepsodent and a Prophylactic.

Putting on an undergarment bearing three well-known initials, a pair of Holeproof hose, Boston garters, a Manhattan shirt, Arrow collar, Cheney cravat, Hanan shoes and a suit of Hart, Schaffner & Marx clothes, I went out of my room a walking advertisement of advertising.

Value in Advertised Goods.

I did not look or feel like the best dressed man in town, because there are some things that are more worth while than mere sartorial pretentions. But I did feel comfortable and satisfied, for the reason that I had confidence in the things I used and wore. They pleased me because of that confidence. I believed when I bought them that I was getting my money's worth—that they would render the service for which I was paying.

I felt secure in their possession, the makers having believed in their products to such a degree that they were glad eo spend money to tell me about them. And those articles which satisfied me because I believed in them cost me no more than others on which nothing had been spent to tell me of their merits.

Mr. Walker has cautioned me against giving you any theoretical treatise on advertising. He tells me to put punch into this talk. And, if I can, I intend to do as Mr. Walker says, inasmuch as I hope to talk to you again some time, and I hope also to have something to do with tile advertising for a few years longer.

But I shall take this much of a risk: I am going to make the assertion that you cannot do or see or hear a decent thing or buy a single commodity that is not under or susceptible to the influence of advertising.

Influence and Wide Use of Advertising.

And if you will stop to think about it you will be surprised when you realise what an influence advertising is having on your life and actions now, and had had yesterday, and the day before, and for years that have gone.

It is not theorizing to tell you that you came here on a railroad that was advertised until Uncle Sam became everything from brakeman to chairman of the board of directors; that you are now in an advertised hotel; that the Sunkist oranges, the Kellogg's corn flakes, the Beech-Nut bacon, the Golden-Spot eggs, the Tip-Top bread, the Meadows Gold butter, the Yuban coffee, the Domino sugar, the Morton's salt, and the Carnation milk which you had for your breakfast are what they are, so far as reputation is concerned, as a result of advertising.

Now I am going to take another chance—not in expounding theories, but in stating some facts which you will not deny.

There are so many elements and factors to consider in the work of getting an article from the place where it is made to the hands of someone who will buy it that advertising sometimes seems to be a more serious business than it really is.

A shipping clerk in some manufacturer's plant, somewhere, put that hat you wore here today into a box along with a lot of other hats. A manufacturer who never saw you had to get you to buy one of his hats.

Your hat made its first stop in a wholesale house. From there it went to a retail dealer in the city where you purchased it. If it happened to be a Stetson, or a Knox, or a Dunlap, or a Mallory, you probably accepted it without question. Sales resistance was reduced just that much.

Reduces Sales Resistance.

And that is just what advertising does for you. It makes it easier for you to buy what you need, and easier to sell what you have in stock. It reduces sales resistance all along the line.

Advertising renders a real service to you or any other retail dealer by backing up the dealer's own reputation and his own ability to sell. It renders a real service to the ultimate consumer by making it easy for him to choose. It makes quicker selection possible. It helps to insure permanent satisfaction and comfort in the ownership and use of the article purchased.

That is not theory. It is the record of success applying to every familiar and widely used product.

But there is another important function of advertising in addition to its ability to create confidence—in addition to the increased demand which naturally follows it.

I refer to a function that should be of particular value to dealers—in a commodity like tile—the suggestive power of advertising; its ability to make people want new things— new improvements—better living conditions—more attractive homes.

In other words, your advertising should not only be designed to help you in supplying needs and wants that already exist, but should also create new wants—new tastes—new habits—finer conditions in the home and its environment.

Double Purpose of Advertising.

Tile advertising should not only compel people to want your tile after they have decided to use tile, but it must go farther and implant in the public mind a desire to use more tile than has ever been used before.

That is the promotion side of advertising—opening the gates to new uses for a produce for which some demand already exists.

In your particular business I believe the promotion feature is the most important. It represents the work that must be done before actual sales are made, and it is only reasonable to suppose that if you and The Associated Tile Manufacturers are the ones who have caused a prospective customer to want tile, you have the best opportunity of supplying that want by making a sale.

The use of tile is in its infancy for at least two reasons:

First, we are in an era of unprecedented building activity. Even if there is a tighter financial market, even if we suffer from strikes and other disturbances, the general tendency of the building world must be upward for physical reasons if not for others. We must continue to manufacture goods, we must make more goods of all kinds, and the people must have places in which to live.

Second, tile has never been used to the full measure of its merits and its possibilities. The old market for tile was never fully supplied. On top of the opportunities for selling tile which have already existed, there is the new market available through the proper kind of promotion work.

Now, I see written on the faces of some of you the question "Why talk about advertising tile at a time when we can already sell all we can get?"

That question is on your faces because you are considering advertising as a thing to be done only when business is not easy to obtain. That is the wrong way to look at advertising.

Keep the Public Sold.

When you undertake almost any sort of transaction in connection with your business—whether in arranging quarters, or buying insurance, or purchasing equipment, or filling the coal celler, or any one of the thousand duties that have to be looked after—do you not have the future in mind, as well as the present?

Yet a lot of men seem to think that advertising is a perishable article; that it will sour, or turn stale. And so they invest in it as they would in a bottle of milk—with present needs only in mind.

If the automobile world bought advertising in that way, there would not be a single car advertised in a single publication today. The automobile industry does not need orders. It cannot fill the orders it has. Yet why are cars advertised more than ever?

FOR THE FUTURE.

The public mind forgets. First place in the public mind is not held by any concern unless the public is constantly reminded.

Advertising for present-day business only is like the man going up and down the street ringing a bell for an auction sale. He is soon forgotten. Advertising when orders are not needed is a constructive force that keeps the public sold—that keeps buyers in a satisfied frame of mind.

More good advertising is being done now, in practically all lines, than ever before, although business in most lines is easier to get than ever before. Production is not equal to demand. Orders are not hard to find. Yet this is considered by wise business men the time to advertise for future protection.

Dealer Service.

Let me call your attention now to a series of advertisments for use in your local newspapers—prepared with both the promotion idea and the future of your tile business in mind.

(Mr. Gale here called attention to the dealer service booklets, showing a number of illustrated advertisements for the use of dealers. He explained the purpose of the copy and told in detail how the dealer may have these advertisements for his own use at the cost of the plates.)

The purposes back of this advertising are to sell tile now to the ones who are ready for some kind of floor or wall material; to make more builders think about tile, so they will at least look into its merits when ready to build; to make builders willing to wait for tile, in the event their order cannot be filled right now; to make owners believe and continue to believe, after the tile is installed, that they have purchased the very best that money can buy; to make your place of business stand out in the public mind as the tile headquarters —as the reliable source of information and service in connection with tile.

A part of the plan of The Associated Tile Manufacturers, in connection with this advertising service, is to give you all the help you may desire in following up the inquiries which come from this advertising.

(Mr. Gale here read a series of three letters prepared for the use of tile dealers in the manner suggested.)

I do not believe you will need to draw upon your imagination to appreciate what this advertising service will do for you if you use it consistently and faithfully.

Consider your advertising as an investment—not an expense. Remember that it pays for itself—absolutely—by making sales easier, by increasing customer satisfaction, by reducing your cost per sale as a result of making more sales.

The latter is a very important proposition. Suppose you were selling clothing. You know that your selling cost per suit would come down as the number of sales increased. That matter of "overhead cost" is an important one. Why not cut your cost, and thereby increase your profit, by making it possible to close sales with less time and effort given to them?

If you do not need business right now—if you are selling all the tile you can get—if the business of today is not a matter of concern to you—think of the tomorrows of your business when the situation may be different. Think of the days of competition which surely will come again. Think how desirable it will be—when the contest between tile and other materials is more serious than it is today—to have tile and your service as a tile dealer stand out from the others so that changed conditions in the building field may find you ready to meet them with the least possible disturbance to your business.—Reprint from Tilecraft.

BRICKLAYING MADE EASY.

Failure to adopt in Great Britain industrial methods which have proved successful in America is a constant source of wonderment to Britain's constructional experts. They ascribe it, variously, to the inborn conservatism of the British craftsman, to the crass stupidity of labor, or to the culpable perversity of trade unions. It is so obvious to the technician that increased production, brought about by mechanical contrivances, or "scientific management" of labor, means increased wealth all round and a better life for the workman individually. What can be the grounds for objection?

By the use of special scaffolding and a fountain-trowel, accompanied by the practice of "motion study" the man who now sets 600 bricks a day might set 1,800. Why doesn't Britain follow the system of "America's lightning contractor" and teach the bricklayer to treble his output? Why doesn't he respond to "hustling methods?"

The answer is not to be found in any work of political economy. But it is to be found in the moral and mental make-up of the bricklayer. Not a word will he say against the excellence of the special scaffolding and the fountain-trowel, which may well be essential in America, where skilled labor is scarce. But—he has been out of work himself, and he knows what that means to his fellows, who may search in vain for the work that would have been theirs had it not been for the improved methods of construction. Economically, that is all wrong. Ethically, there is much to be said for it. The spirit of good will and fellow-feeling—the root of principles of trade unionism and of every other communal organization —lies behind it. Once the bricklayer can feel sure that his additional output will not prejudice his own or his fellows' future chances of earning a livelihood, he will welcome mechanical improvements as heartily as any constructional expert. But till some scientific preventive of unemployment is devised he will stoutly refuse to do more than his share of the work, no matter how fair a "deal" is offered, as between him and his employer.

It is the same with the painter. More than twenty years ago spray-painting was introduced in America, whereby a man may paint the walls of a fair-sized room in twenty minutes—and make a better job of it than will four men with brushes, employed for half a day. The psychological problem —how to remove the fear of unemployment—must be solved before full advantage can be taken of such wonderful labor-saving methods. Otherwise, the tendency is to decrease, not increase, production. Can anyone wonder at this, who has ever paused to reflect what was the fate of drivers of horse-drawn vehicles from 1909 onwards?

SAYS BIG MOTOR TRUCKS CAUSE LESS ROAD WEAR AND REPAIRS.

THERE IS PROBABLY no more vital nor widely discussed topic of interest in the motor truck industry just now than the relation of heavy-duty trucks to road wear. Much opinion has been expressed to the effect that large capacity vehicles, by virtue of their greater weight, are in some measure responsible for excessive road deterioration.

Some interesting and pointed facts in this connection were brought out recently in an interview with R. E. Fulton, vice-president of the International Motor Company.

"No one realizes better than the motor truck manufacturer," said Mr. Fulton, "the necessity of putting into force legislation which will preserve the roads and enable this country to approach more rapidly its ultimate state of highway perfection. It is doubtful, however, whether the policy which is now pursued of restricting large capacity trucks will be effective in accomplishing this end. There are but two possible ways of preserving the roads through legislation,—either the total tonnage of traffic passing over the roads must be reduced or the road wear per ton of material transported must be decreased. Barring the heavy-duty truck is an attempt to save the roads by the first method. The elimination of this most economical of motor transportation units tends to make the cost of highway transportation prohibitive. If eliminating the seven and one-half ton truck would divert the freight formerly carried in those units to some entirely different transportation agency then its elimination would reduce road wear. The other carriers are not even able to cope with the traffic already in their own legitimate sphere. Therefore, if this freight is to be moved at all it must go over the highways in a large number of light vehicles regardless of the increased cost of such transportation.

"Apparently the object of prohibiting the seven and one-half ton truck is to decrease total tonnage over the highways. Let us see how it works out. The average truck of one ton capacity weighs by itself approximately two tons. On the other hand, in a seven and one-half ton truck there is less than one ton of vehicle weight for each ton of freight capacity. This means that in transporting seven tons of material in one ton trucks, twenty-one tons of traffic (total weight of vehicle and cargo) will pass over the roads whereas if transported in a seven and one-half ton truck the road will have to bear only fourteen tons of traffic. In other words, the tonnage formerly shipped in seven and one-half ton trucks would have to be decreased thirty-three per cent before there would be any actual reduction in the volume of traffic. Furthermore to even approach the economy of the heavy-duty truck in bulk hauling the light vehicle must resort to excessive road speeds which have been definitely proven to be more destructive than increased weight.

"Although it might be advisable at the present time to decrease the tonnage transported over highways, it is not possible to do so because there is no other agent capable of taking over this traffic. Thus the only alternative is to direct legislation toward reducing the road wear per ton materials transported. The results of tests recently conducted by the Bureau of Public Roads at Washington indicate clearly the way in which this can be done. These tests show that the road impact is the principal cause of highway destruction, and also the road impact does not necessarily increase in direct proportion to the size of the truck but is governed by the amount of weight which a truck carries below its springs. For instance a five and one-half ton chain-driven truck fully loaded delivered only sixty-eight per cent of the road impact pressure produced by a three ton shaft-driven truck operating under the same conditions. This is accounted for by the fact that a chain-driven truck carries all of its driving mechanism on the frame above the springs whereas in a shaft-driven truck the entire weight of the final drive and its housing rides directly on the rear axle and the blow which this delivers to the road is unrelieved by springs.

"Not gross weight but actual pressure on the road is the all-important thing to be considered in framing laws to protect the highways."

A BACKWARD THOUGHT.

IN THE MIDST of a mass of complaints about slow postal service there comes a story relating the fact that the postage stamp was first put into use in this country 73 years ago. When we look back at this and do a little thinking about the progress which has been made in that short space of time we feel inclined to marvel at the progress rather than fret about the car shortage and inefficiency of the postal system. When we realize that 73 years is only the span of an ordinary life and that during that time we have built up our great railway system, developed electric lights and power and practically all of our big manufacturing industries, have seen the coming of the mower, the reaper, sewing machine, typewriter, automobile and all the many aids to supply the desires of mankind, we feel inclined to stop grumbling and give praise for the progress made. It is true we stumble and fall and crack our shins now and then, but after all when we think backward awhile and visualize the development which has taken place all around us in the short span of a human life we should feel mighty happy that we are living today and are a part of the greatest country on earth.

PRODUCTION AND USE OF MAGNESITE.

The production and use of magnesite was stimulated considerably during the war period because it enters largely into refactories in the metal industries. This is especially true of the magnesite from Montana and Washington. Quite a percentage, probably three-fourths of that produced in California, was calcined and used in the plastic trade mainly for the making of what is known as sorel cement for floor and stucco purposes.

The total output of crude magnesite in 1919, according to a Geological Survey Report, was 162,000 tons, the production being mainly in Washington, Montana, California and Texas. Most of the Washington product went to the steel mills as did also part of the California product, but the main part of the California product went into plastic industries.

The Northwest Magnesite Co., of Chewelah, Wash., is the largest producer of Magnesite, the other producers in Washington are The American Mineral Production Co., Valley, Wash. The principal producers in California are the Porterville Magnesite Co., Porterville, Calif., and the Tulare Mining Co., at Red Mountain, Calif., the White Rock Mine in Napa County and several others.

So far there has been no great resumption in the imports of magnesite and because of this fact hope is held out that 1920 should prove a very good year in magnesite development both for refractories and for plastic uses notwithstanding the passing of those urgent demands created by war conditions.

Now that every other cause has been named as responsible for old High Cost, it is about time for the "wets" to prove that prohibition is to blame for it. In this connection we may remark that the only place where there is plenty of housing room reported is in the jails of the country, which are beginning to look empty and deserted since the demise of John Barleycorn.

USE OF BURNED CLAY IN BUILDING.

WHETHER OR NOT the use of burned clay in building operations is increasing is a subject of vital interest to every clay man. This applies to the man who builds with brick or the man who furnishes the clay with which building operations are carried on. The object of all these varied interests is to influence builders to use more and more burned clay, because in doing this they are conserving their own interests and are adding to the safety of the community in which they erect their buildings by constructing fireproof structures. Burned clay is the only material which is really fireproof. All others will fail under certain conditions. Burned clay alone will withstand the intense heat of a great fire and come out unscathed. If it were possible to construct a building of burned clay alone it would never burn.

Probably the heat generated in even the largest fires is not as great as that in one of the cones reached before the burning in the kiln is finished, and as long as the heat does not exceed those cones the brick or tile will withstand it successfully. This is a feature of such importance that no builder can afford to overlook it, yet unless his attention is called to this phase of building with brick very forcibly he will never see it, or how much and how vitally it really affects him.

PORCELAIN "MONEY" IN GERMANY.

The issuance of porcelain money throughout Germany was recently discussed, and a number of specimen coins, from 10-pfennig to 5-mark pieces, have lately been produced.

In some parts of the country the sentiment in favor of using brick is increasing and in other the buildings built of brick are increasing, but, unfortunately, this is not true everywhere. In some localities it would seem as though the builders have forgotten that brick exists, excepting where they want some of poor quality for filling purposes or they use hollow tile for outer walls and partitions, merely to cover it up with stucco or some other form of cement.

While the advertising which has been done for brick in the past three or four years has been highly beneficial, it has not achieved the results which have accrued from the advertising which the cement men have done. It is true that the sums expended are smaller and it is equally true that the time during which this advertising has been done is much less, but the fact remains that brick has not kept up in any of the departments where it is useful. It requires a little more steam in the boiler to put over the selling campaigns which should develop from the intrinsic merits of brick as a structural material. Cement may be good for foundations, but it is seldom that a structure above the ground can be satisfactorily built of cement or concrete. Any example, after a short time weathering, is sufficient proof of this.

But notwithstanding these palpable weaknesses, and they are palpable, the cement people have succeeded in establishing the opinion that the only structural material worth while for dwellings or some other forms of construction is some form of cement or concrete. And now that they have succeeded in establishing this opinion, they are continuing to maintain the so-called supremacy by advertising. They indicate some of what has been done, but they never mention the numerous failures, such as bridges in storms and similar events, which the builder should know before he makes a selection of the material he will use in his new structure.

Brick cannot be faked. It is absolutely impossible to foist a poor brick upon a man who knows about brick. The brick shows for itself. It is not necessary to try it in the wall to discover whether it will fail or not. That can all be determined beforehand, and the builder can proceed after he has made his tests, with complete assurance that the quality of his material is without flaws or of poor quality. This alone is worth much.

It should be very gratifying to brick men that when the builder wants a material which will give him both utility and beauty he selects brick, yet the quantity which is thus taken might be increased many fold. It should be so increased, and it will be as soon as the building public knows what is best for structural work. This includes dwellings, of course. A great many dwellings will have to be erected during the next few years. No one can say how many are short in each community, and until building overtakes this demand the call for new homes will be as strong as it is now, or possibly it will increase.

The brick manufacturer has a great opportunity presented to him now. He is getting help from his association affiliations, but he needs to do something himself. Birds can sit on the edge of the nest and take lessons in flying, but they can't fly until they exercise their own wings. The brick manufacturer can fall back upon the advertising done through the associations, but he can't get very far unless he supplements this with advertising campaigns of his own, calculated to call the attention of potential builders in his community to brick in a general way, but to his brick as embodying all the excellencies advertised in the association literature.

General advertising is essential. It should have been done before; yet, for the benefit of the manufacturer who has a plant in some town or city, the national advertising is of little use unless he ties it up to his own plant and his own product. The emphasis should be placed upon this phase of brick merchandising. Make your communities see that they can obtain the brick and other clay material they want right at home. The fact that what they want can be obtained at home will go a long way with some builders. Others will not care particularly for that phase of it, but they can be made to care that brick be used in their structural work. It requires emphasis upon the excellencies of the material. And this emphasis must be based upon continuous talk until they all come to understand exactly what it means.

Great public buildings are built of brick and other forms of burned clay because of ease in handling, beauty when finished and relative low cost. Movement in the direction of burned clay for any one of these reasons promises to become important as soon as the fact is made sufficiently clear, yet it would seem as though many otherwise astute business men fail to see their opportunities. It is partly because the proposition is new to them. Men have difficulty in breaking away from old established ideas. They have never sought business in that way, consequently they fail to see its advantages. They have gone on in the same way, sending out brick if somebody came after them, but never exerting themselves to bring about an increase in the sale. They have let the possible buyer do the searching, thus permitting him to be met with propaganda for some other material and perhaps thereby losing a sale.

They must learn to talk brick continuously. They must learn that it is only by hammering incessantly upon this one point that they can accomplish anything. They will have to recognize that the situation has reached a stage where it is essential to get behind brick and not only sustain the reputation it has already made, but build a larger one and build it better than the one upon which they are resting now.

The time has passed when men wanting some sort of merchandise, they are not quite certain which, will wander around until they find the right one. Instead, the salesman of some merchandise that will take the place of what they really want will overwhelm them with his assertions of the superiority of his material. And it will end in its selection.

Impress it upon the mind of the proposed builder that brick or some form of burned clay possesses advantages for building purposes which are unsurpassed. Make him understand that if he intends consulting his own interests he will select brick, or burned clay. Show him why it is best and make the demonstrations so clear and convincing that he cannot be swayed from his purpose by some one offering a substitute which is declared to be just as good. Nothing can be as good as brick for this particular purpose. Nothing can compare with it for the construction of the large building or the small one. Nothing can make a prettier or more practical and safe home. It is such facts as these which must be driven home and then driven after they are home.

Men know, who have anything to do with publicity in any form, that one of the hardest things to do is to make people understand. Therefore, it is essential that the brick man utilize all the advantage his associations afford him and then a sufficient number of his own to make it impressive. Only by getting up on the housetop and calling the qualities of your wares louder than your competitor can you hope to equal him in sales. Only by shouting through a trumpet so loud that those who are likely to be interested will pause and listen can you hope to attract attention to your wares, excellent though they may be. It is this housetop calling, this trumpeting, that the advertising will do for you. Once you can get the prospective builder's attention you can demonstrate to him in scores of ways exactly what excellent qualities are possessed by your brick. But you can't do a thing with him until you do get his attention.

Figuratively speaking, you must hit him with a club. And you must keep on hammering until you have him buried beneath a mountain of proof that will convince him that you are right. This is the way to sell brick, just as it is the way to sell anything. Only coffins and medicines are bought without advertising. Be alive and make your message clear to everybody who owns a house, who wants to own a house, or who, in the coming years, will build a house.

SILICA BRICK.

Of the 1919 refractory products there is a brief special report covering silica brick, which shows that the silica refractory product for 1919 was equivalent to 216,363,000 9-inch brick, with a value of $11,798,000. The average price per thousand of silica brick was $54.53, as compared with $59.39 in 1918. While the output of silica brick in 1919 was smaller than in 1918, it was greater than that made in any year prior to the war.

METHODS OF HANDLING BRICK CLAYS CONTAINING STONES

*By Joseph Keele, B. Sc., Ottawa, Canada.

IF A CLAY CONTAINS only a few scattered pebbles or rock other than limestone or dolomite, then it may be worked, if its other properties are good. Broken wires may frequently occur in the cutter if stiff mud brick is being made, or an occasional brick will firecheck if it contains too large a pebble, but if proper crushing rolls are provided for the clay to pass through, or if a dry pan is used for grinding, the loss of time due to broken wires can be stopped. It is the presence of limestone pebbles that causes the real difficulty in working stony clays.

Many methods have been tried for eliminating the troubles due to limestone in clay, the simplest probably being that of using a pair of rolls set above the machine. Rolls that are designed for crushing stony plastic clays, reject the rocks of hard portions which are too large to fall within the angle of nip and grind, or pulverize the smaller stones which pass through with the clay. The Diesener clay cleaner is a machine devised especially for removing pebbles and coarse grit from plastic clays. In this process a bar of clay is pushed from an auger machine through a slot and against a revolving disc. The disc sucks the clay through the slot, but the pebbles stop behind and are scraped away with a knife. This machine is said to purify clay at the rate of 10 tons an hour through a slot of $\frac{1}{16}$ in.

Another scheme is to use a dry pan with the mullers set an inch or so above the surface of the pan. This process is supposed to break down the clay and force it through the perforated bottom of the pan while the pebbles stay behind. The pan is stopped occasionally while the stones are thrown out.

Another plan is to grind the clay, pebbles and all, in the ordinary way in a dry pan, working continuously, and run the clay over screens so as to reduce the limestone pebbles to small enough size to be harmless. In using the dry pan method, the clay must be in the dry condition; this involves the provision of a storage room for drying clays or for the use of rotary dryer.

It has been proved that unless limestone in clay is ground finely enough to pass through a 30-mesh screen, it will cause trouble by developing soft white specks in the burned bricks which will cause flaking of the surfaces. Of course, these small grains of lime, unless very plentiful, would not weaken a well burned brick very materially, yet they would be sure to disfigure bricks for facing purposes.

As it is not practical in any of the crushing or grinding processes to reduce the pebbles to this small size, the trouble with lime grains is not entirely eliminated by them. Furthermore, any of the rough grinding proccesses, such as passing the clay through rolls, merely accentuate the trouble, since they often break up one pebble of limestone into several smaller ones, each of which then becomes active after burning.

The most effective way to treat clays containing limestone pebbles is by a washing process which would leave the stone behind as a heavy residue, the overflow taking the fine clay down to settling basins. Washing of high grade clays, such as kaolin and stoneware clays, is the common practice, but the poorer grade of clays used for brick and tile are not washed because the value of the product will not offset the

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*Paper read before the Eighteenth Annual Convention of Canadian National Clay Products Association.

extra expense. One plant at least, however, in the United States, successfully cleanses glacial clays from limestone pebbles by a washing process.

Hitherto we have been dealing with the treatment of the raw clay, but there are certain aspects of the burning, and of methods dealing with the burned product, which must be considered. In certain parts of England where clays containing limestone pebbles are worked, it is customary to grind clay as fine as practicable, and after the bricks are burned, the cars on which they are loaded are drawn through a pool of water so that they are completely immersed and saturated. This treatment slakes the lime particles quickly and appears to do less damage than if they were allowed to slake and expand slowly from the moisture absorbed from the atmosphere.

At the Don Valley Brick Works in Toronto there are certain beds of stony clay interbedded with the stoneless clay and both are worked together. As the clay drops down through the rolls from the pug mill, the larger stones are expelled by the rolls and the small ones go through to the machines and are crushed. This clay is used in the manufacture of end wire cut brick and burned in an overhead fired continuous kiln. The limestone particles give surprisingly little trouble in the burned product. It seems as if the method of burning had something to do in checking the subsequent activity of the live particles, due to the smoky atmosphere and reducing conditions present in the chambers of the continuous kiln. The reducing condition at high temperatures appears to cause fusion between the surface of the lime particles and the surrounding clay, and this fused skin prevents the access of moisture to the lime; but whatever the reason is, the lime is more effectually killed than it would be after coming through a well oxidised firing.

Finally we have to consider the addition of some substance to the clay which would prevent the slaking of the lime after burning. The writer has made many experiments to this end but found that the only practical thing to do was to add some salt to the water used in tempering. A set of test pieces of burned clay containing limestone particles to which 1 per cent. of salt was added have now been standing in the laboratory for about a year, and show little or no indication of disintegrating, while similar test pieces made up without the salt have gone to pieces long ago.

NEW FACTORY AT MATAWAN.

The Atlantic Tile Manufacturing Company, Matawan, N. J., has plans completed for a new factory to be built on the property adjoining their present plant. This new factory will have at least ten additional kilns for the floor tile and one or two English tunnel kilns for glazed tile. All modern and up-to-date ideas of construction of factory buildings will be incorporated into these new buildings and special attention will be given to the requirements for the personal comfort of the employes.

A complete hospital will be equipped in charge of competent help to give emergency relief in the case of sickness of any of the employes.

Lunch and rest rooms will be provided for the female employes, and it is planned to have the roof arranged so that it can be used for special entertainments and open-air exercises. This new plant will make the Atlantic Tile Company's business one of the largest in the East, and they will employ at least 200 people. It is expected that the work will be started so that the machinery can be installed before the cold weather sets in and the plant should be fully equipped and in operation within six months. Charles Barker is secretary of the Atlantic Tile Manufacturing Company, Herbert Gittin is superintendent, and John P. Lloyd is general counsel.

THREE OHIO COMPANIES CONSOLIDATE.

THE CONTINENTAL Clay Company, with an authorized capital stock of $2,000,000 preferred and 40,000 shares of common stock, no par value, recently organized in Ohio, will have its main executive offices in Canton, it was announced Wednesday. J. A. Calhour, secretary and treasurer of the C. and B. Clay Company, of this city, is to be president and general manager of the new organization. The new corporation has taken over the properties of the C. and B. Clay Company, at East Greenville, the Massillon Brick and Tile Company, of Massillon, and the Ohio Clay Products Company, at Salineville, Ohio. The purpose of the new organization is to consolidate and standardize. The idea is to expand this business so the different units of the organization can be utilized in the making of a particular kind and size of building material. For instance, the company plans to manufacture hollow building tile of various sizes and various kinds of brick, drain and tile. The idea will be to have one unit of the organization make 4 x 5 blocks continuously, one unit to make 5 x 8 blocks continually. The other sizes will be made by different units as they are added to the organization. The company was capitalized with Vice-President J. H. Burns, Steubenville, Ohio. Other officers of the company are: Warren B. Ferris, Columbus, vice-president; J. H. Burns, Steubenville, treasurer, and C. E. Berridge, of Columbus, secretary. These officers, together with O. A. Eberhardt, of St. Paul, former governor of Minnesota, Judge P. A. Berry, of Mt. Vernon, former commissioner of securities, and E. H. Miller, of Miller and Coulson, of Pittsburgh, Pa., are directors in the company. This organization of the clay industry will mean more production of building material at a lower manufacturing cost than ever before, it is said. H. W. Dubiske and Company, of Chicago, are acting as fiscal agents for the Continental Clay Company.

NEW PLANT AT CISCO, TEXAS.

The Cisco Clay and Coal Company has been organized and incorporated here, with a capital stock of $250,000.00. The company has leased the 160-acre Kleiner farm, adjoining the city, and will begin at once the erection of a plant for the manufacture of paving and face brick, pottery, stone ware, cooking vessels, porcelain fixtures and architectural terra cotta. The deposit of clay suitable for use in manufacturing architectural terra cotta is the first discovered in the State of Texas. The Cisco and Northeastern Railroad, a line recently completed by Cisco capitalists to the Stephens County oil fields, will build a one mile spur to the company's plant.

The coal mine on the Kleiner farm has been worked by hand for the past four years. A 65-foot shaft at the end of a 600-foot tunnel discloses two veins of coal, each about 30 inches in thickness, and four distinct stratas of clay. This coal, when mined, will be pulverized and blasted into the furnaces by air.

Clay excavating machinery has been purchased for early delivery. The plant, when completed, will have a capacity of 50,000 bricks per day. Pending the completion of its plant and trackage the company will mine the coal for local trade. Beginning with an output of 25 tons per week, this will be increased until 100 tons per week are being mined.

The company reports the location of deposits of kaolin and silica which will also be used in their Cisco plant

The real problem back of the coal situation is that of transportation, and the shortage in transportation facilities is threatening the delivery of clay products, too; so here's hoping that the railway owners will be able to show some immediate improvement in railway operations as compared to government administration.

GATES TURNS EDITOR.

A MAN has lots of nerve these days, with the high cost cost of paper, printing, etc., to venture into the publishing game, but what it takes to have nerve we should prognosticate the King of the Button Holers possesses. He had nerve enough to stick in the clay game all these many years, and it doesn't take very much more to be a journalist. Where or how he got his nerve, is neither here nor there, the big fact remains that W. D. Gates is now a full-fledged editor.

How very appropriate is his chosen field! He is the editor of Common Clay, the house organ of The American Terra Cotta and Ceramic Company. If there is anyone in this broad big industry of ours who can speak knowingly of common clay and hold it up and show it off in all its splendor, most meritoriously, that one man is W. D. Gates, president of the American Terra Cotta and Ceramic Company, originator of the beautifully artistic Teco Pottery, ex-president of the National Brick Manufacturers' Association, American Ceramic Society, etc., etc., and official Button Holer of The Clay-Worker. Mr. Gates is an expert in knowledge of high grade clays and naturally, through several score of years mingling with the claymakers of the world, has gained a fundamental understanding of common clay as is clearly depicted in his splendid Button Hole Talks, so he is well qualified to pen the editorials of this new publication.

Upon receipt of the first issue in July, we waited a while to catch our breath and before we got full control of our faculties, along came a second issue and the wind was taken completely out of our sails. And we are content to let the boat drift along in the calm while we read the very interesting and entertaining editorials, button-hole talks and articles on terra cotta lines in particular.

We are indeed well pleased with Editor Gates' first efforts and don't believe their little monthly house organ, Common Clay, can be much improved upon.

In Number One of Volume One, there appeared some illustrations of terra cotta structures and trimmings, a complete set of the panels representing events in the life of Abraham Lincoln, executed in architectural terra cotta, and now a permanent part of the Lincoln Memorial Building, Illinois State University, a view of the plant at Terra Cotta, Ill., and the teco garden plot with its figure of Pan guarding over the water lillies. Of most interest, however, to architects, prospective builders or users of terra cotta, is the publication of information relative to the Pulsichrome finish terra cotta, now one of the most popular architectural terra cottas in the country today. This is beautiful ware, on which the ceramic finish is applied by a new machine, styled the Pulsichrometer, which throws the glaze onto the ware with a measured pulsating beat that gives the ware a depth of finish that can be accomplished successfully in no other way. Full credit is given the inventor in this connection in the following statement:

"Mr. M. E. Gates, of the American Terra Cotta Company, is a scientist and chemist, a few years ahead of his time. Realizing that terra cotta is a mixture of brains and clay, and that clay was plentiful, he put the brains to work and devised a machine by which speckles and spots were thrown automatically, measured and blended, eliminating the personal equation, producing a finish which is a delight to the eye and a triumph to art. Every time we have shown it we have sold it. It has the texture of an oriental rug. It gives a new picture every time it is viewed from a different angle. It is not imitative. It is simply different."

Special departments appear in the little magazine, namely, Architects We Know and the Work They Have Done, Contractors We Have Known and Some Work They Have

Factory Office of American Terra Cotta and Ceramic Co., Terra Cotta, Ill.

Done, Who's Who in the American Terra Cotta Company, and a Primer of Terra Cotta.

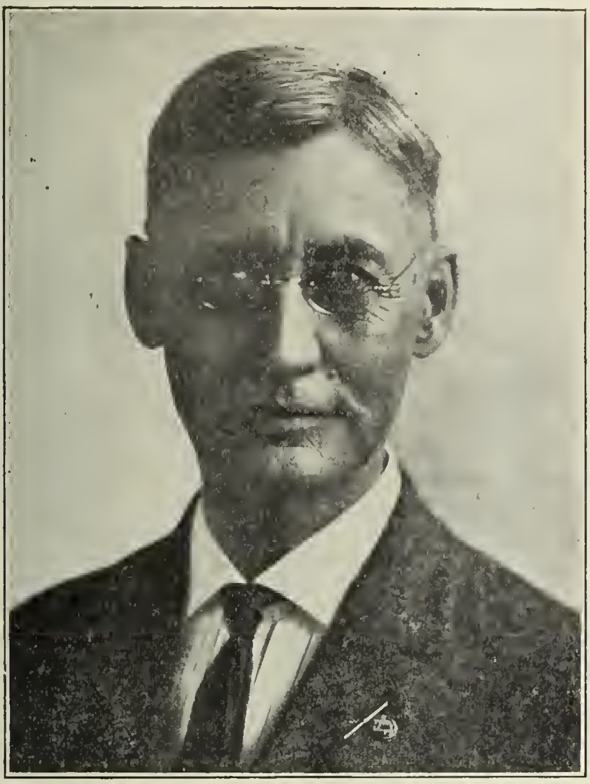
As a whole it is a most welcome addition to our ceramic exchanges, and each succeeding issue will be read with much interest we are sure. More Power to the Gates, the American Terre Cotta and Ceramic Company and their latest venture, Common Clay.

BUTTON HOLE TALKS.

By W. D. Gates.

FOUR thousand years ago two men met in a business transaction in far away Babylon and left this lasting memorial of their meeting.

It came to me from a friend who dug it out the ruins there. It is delicately inscribed in the Cuneform characters, possibly the oldest written language. My friend, is perfectly at home in reading this, though he cannot easily read my writing. It is a receipt for specific articles left at the Temple and the man whose deft hand inscribed it, used his judgment in selecting a proper and lasting medium on which to inscribe the document. He exercised judgment in selecting what we term a fat clay, one that is very plastic and will retain every impression, no matter how slight, and would show it in a clear cut and incisive manner.



Editor W. D. Gates.

It is only an inch and a half square and a half inch thick and I have another only one quarter this size in which the inscription is equally clear, being almost microscopic.

Most of these stored mementos of the dim past were left stored in the raw or unburned stage and hence were not so indestructible as are these; but these men knew their business, knew that when the clay had been properly formed and dried it could be subjected to fire and its whole nature changed, it would be made indestructible.

Another view of this comes to my mind, as I write, and that is the fact that there are really no new stories. You will remember the story of the Irishman who was haled into court and fined by a Justice of the Peace. He hung around, waiting, until the Justice told him to go his way. He insisted he wanted a receipt for his fine showing payment. The Justice told him he didn't need it, the record showed it was paid and that was enough. The Irishman then said, "Suppose your Honor that I die and go up to Saint Peter and ask him to let me through the gate. Says Saint Peter to me, what kind of a life have you lived down below, have you paid all your debts? I say yes, your Honor. He says how about that little fine they put on you in that little old Justice Court, did you pay that? If so show me the receipt. Then, your Honor, I'll have to go hunting all over Hell for you." It's a good story and really older than I thought. This little piece of burned clay satisfies me that the story was well known even then, four thousand years ago, for these men not only wrote the receipt properly but they fixed it so it wouldn't be burned up in Hell.—Common Clay.

GREAT BRITAIN WILL NOT USE WOOD AS BRICK SUBSTITUTE.

DURING the last few months the daily press of many cities has carried an occasional item to the effect that Great Britain was turning from her traditional policy of building with brick because of a great shortage of material, and intended to use wood as a substitute. It would be interesting to know by what agency this rumor was spread, for according to a recent consular report the story has no foundation. The people of the old country have no intention of abandoning their habit of building with brick for permanency, or of constructing their homes of flimsy and temporary material.

The report goes on to say that English builders will undoubtedly take some of the American ideas as to the plan of the small house, modify them to suit their own needs, and build in the main with brick, because even with the present advantage in first cost brick houses are cheaper in the long run.

It is interesting to compare the main points of difference between the American and English plan of the small home. The rooms in the English home are designed for privacy, the living room and dining room being closed off with ordinary three-foot doors, and are always entered from a hall or corridor. In the American plan the hallway has been largely abolished, or where it exists, opens into the principal rooms through a wide cased opening and there is frequently only a mere apology of a partition between living and dining rooms. The American plan, although losing somewhat in privacy, is much more open, and the first floor is actually more spacious than with the English plan. Almost every square foot of the American first floor can be used and enjoyed every day. With the English plan the rooms appear much smaller and being entirely cut off, lend themselves better to the old fashioned custom of closing off the parlor and using it only on Sundays and state occasions; and making it a place associated by the younger generation with best clothes and Sunday manners.

The development of the open plan has been made possible largely by modern heating methods, the whole house being heated evenly. The English house is heated entirely by open fireplaces, each room forming a unit which is heated separately, making necessary some means of closing each room.

Public sentiment is acknowledged as the greatest force in the affairs of mankind. It has dethroned monarchs and made a goat of King Booze, but what we are anxious to know about is when it is going to direct its full force against flimsy home building and in favor of construction that will prevent fires as well as stand the test of time.

THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

PAVING BRICK CLAYS.

Editor the Clay-Worker,
Indianapolis, Ind.

Dear Sir:—

In your Trade Quiz Box for August a statement is made that shales that are free from alkalies that produce whitewash and have enough iron in them for fluxing so the brick vitrify at a medium heat, are mostly employed for making paving brick. Some excellent pavers white-wash (scum) so badly you can scrape it off with a knife. Alkalies seldom produce scum. Iron is a flux but not the chief flux and not essential as your correspondent shows in the statement that No. 2 fire clay makes a good grade of pavers. Compared with shale such fire clays are low in iron content. Surface clay may be useful in such instances but quite as often the shale alone makes the better product. It depends upon the character of the clay and shale.

Yours truly,
CAREY P. ELLIS.

WEBSTER KILNS IN DEMAND.

Editor Clay-Worker,
Indianapolis, Ind.

Dear Sir:—

You no doubt will be interested in knowing that I am doing considerable business with my kilns. Mr. T. A. Robertson, Monterey, Mexico, writes me that they have commenced construction of our continuous down draft kiln. This will be an eighteen unit kiln, with a capacity of half a million brick per week. You will perhaps also be pleased to know that Messrs. Alwine Bros., New Oxford, Pa., and the Beaver Clay Manufacturing Company, of New Galilee, have both purchased plans and license to operate our continuous down draft kiln, and will build them to burn early next year. Messrs. Thorton Bros., of Rudyard, Mich., will also build a new hollow tile and drain tile plant to be ready for next season's trade,and will install our continuous kiln. We have already been called in as consulting engineers and advisors.

Yours truly,
Newport, Ky. HENRY WEBSTER AND SONS.

A CORRECTION.

Editor the Clay-Worker.
Indianapolis, Ind.

Dear Sir:—We wish to refer to your magazine of August, 1920, page 149, article entitled, "Brick and Tile Men Discuss Rail Rates."

I am quoted in this article as having stated that Eastern manufacturers of brick and tile are endeavoring to have freight rates put on a basis so they can use the Southwest as a place to ship their surplus.

I most emphatically deny having made any statement.

If anything at all was said at the meeting mentioned in the above mentioned article, about manufacturers using the Southwest as a dumping ground, it was that the level of rates as proposed by the attorneys representing the hollow tile, paving brick and face brick national associations, in ICC Case 10733, if adopted by the Interstate Commerce Commission, would bring about enormous reductions in the freight rate, from our principal competitors, most of whom are located in the states of Kansas, Missouri, Indiana and Illinois, and that such reductions would allow their using the Southwest as a dumping ground at any time they cared to so use it. We are naturally opposed to having our investments jeopardized in any such manner.

The writer will appreciate it very much if you will give this letter the same prominence in your magazine that you gave the above mentioned article.

Very truly yours,
ACME BRICK COMPANY,
Fort Worth, Texas. W. R. Bennett, President.

LANCASTER MACHINES IN ENGLAND.

The Clay, Worker,
Indianapolis, Indiana.

Gentlemen:—

Last January we started shipment of a large order of Brick Machinery equipment to England. The first consignment included the brick making machinery, which was afterwards followed by Dryer equipment. The Brick Machine was put into operation at the brick fields of the Slough & Langley Brick Company, Slough, Bucks, England, near London. They manufacture quite a large brick, the mold size being 9½ inches by 4⅝ inches by 2¾ inches, and they operate six bricks to the mold.

We received a letter from them in May in which they stated that the Brick Machine was in successful operation, and was making more bricks than they could conveniently take care of.

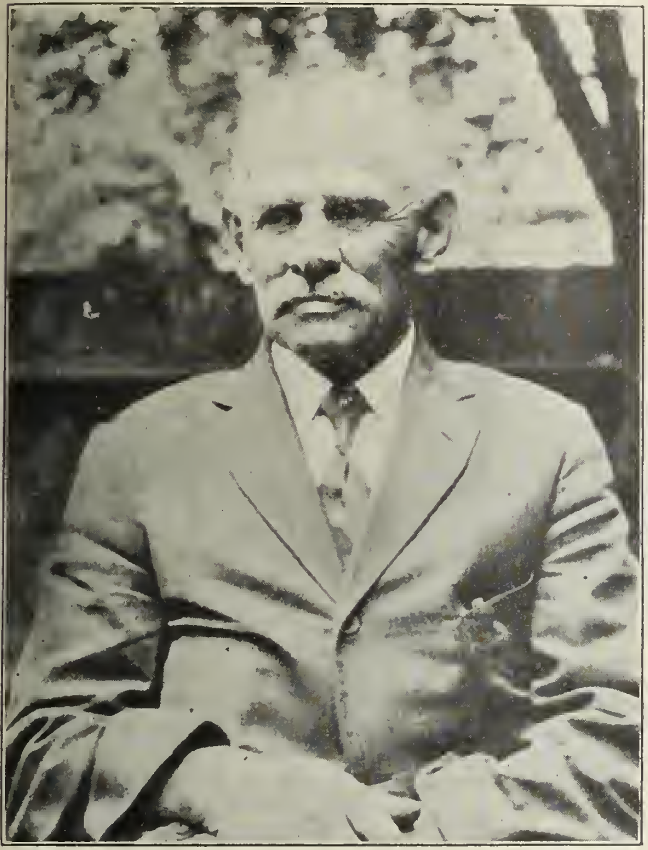
As you probably recall, we sent our erecting engineer, Mr. Frank F. Foulk, over to England to take charge of the erection of two (2) complete Outfits of Brick-making Machinery and Dryers, manufactured by the Lancaster Iron Works, Lancaster, Pennsylvania. These equipments include our latest improved 1920 Model Brick Machines, Mold Sanders, Pug Mills and Clay Preparing Equipment.

Two (2) Complete Pipe Rack Dryers of our very latest design have also been shipped, and will be installed by Mr. Foulk. These Dryers will include the equipment for low pressure steam circulation by the Vacuum System, original with the "Martin" Steam Pipe Rack Dryers, and they will also be equipped with our latest improved Cable Conveyor System for delivering the brick to the dryers, and our latest improved Car System for delivery of the dry brick to the kiln.

We now have a letter from him under date of August 31st, and which contains data that we thought might possibly interest the brick manufacturers of this country, and therefore we are giving you extracts from his letter, and if you think it is of any value or use, you will have it available.

"In making brick their way, buildings are not needed—the machinery, kilns, engine all out in the weather. The whole process is new to me, except that they are making them now on our machine with quite an unhandy way to get them to the hacks, where they dry. Only one layer can be put on a hack in one day, therefore they must have a large number of them. Our Pipe Rack Dryer System will correct this.

The setting of the kiln, or clamp, rather, is new to me, but old to them. They start the setting by two open courses of burned brick on level ground, then filling all the spaces between these bricks with what they call Brees, which looks like the screenings from burned bituminous coal. Then after all spaces are thoroughly filled, they put from 8" to 9" of this same Brees on top of these two courses of filled in brick to form a bed of fire right under the green brick. The green brick are then stacked on top of this Brees as close every way as they can possibly get them. No arches are used, and no coal thrown after the clamp is finished, neither do they have any men around the clamp while it is burning, and at the time of my writing the men are stacking on one end of the clamp, while at the other end the men are taking away the burned brick, loading them on trucks to be taken to buildings, while the fire is burning between both ends. There are no walls or partitions used in this process, the clamp is scoved in but not plastered or daubed like on the Hudson. Of course in making these brick a lot of the finer portion of this Brees is mixed with the clay before the brick are made, enough to carry the fire to the top of the clamp which is thirty courses high. These people are certainly burning brick a lot cheaper than can be done in the States, but they would not sell for face brick in our market, as they are full of holes all over where this Brees burns out."



Frank F. Foulk, Erecting Engineer of the Lancaster Iron Works, Who Is in England in Charge of the Erection of Two Plants.

Yours very truly,
LANCASTER IRON WORKS, Inc.
Jas. P. Martin, Manager,
Brick Machinery Department.

MARKETS FOR BRICK MACHINERY.

Since the coming of the war there has been quite a series of consular reports on possible markets for brick machinery abroad. Most of these have been reviewed in the past by The Clay-Worker. Now we are informed that unpublished consular reports with reference to the published articles have been bound and can be examined at the Bureau of Foreign and Domestic Commerce, at Washington, or any of its district offices.

NEW ENGLAND CLAY NOTES.

The Tuttle Brick Co., Middletown, Conn., during the present year will make over thirty million. Part of the year they were short of help.

The R. O. Clark & Son Co., East Berlin, Conn., have been operating their three yards and have turned out a considerable amount of brick.

The C. P. Merwin Brick Co., Berlin, have run one machine number five, all this season. They will make about seven million brick.

The record for the Donnelly Brick Co.. New Britain, Conn., for the last twelve months is over fourteen million brick, made on a New Haven brick machine.

Richard H. Perry, manager of the Boston Brick Co., Boston, Mass., states that the demand for brick is far beyond any chance of meeting same. Their Chelsea yard is running to full capacity.

The plants of Robert E. Pray at Greenfield, Mass., and Thomas Bros., Turners' Falls, Mass., have been running about fifty per cent. due to labor shortage.

The Norton Brick Co. and York Harbor Brick Co. at York Village, Maine, are being dismantled. All the machinery has been sold and the land is to be cut up into building lots for shore cottages.

The plants of Humboldt Brick Co. and Wm. Lucus at Portland, Me., are in operation and will continue until cold weather.

W. S. Goodrich is running his plant at Epping, N. H., to full capacity.

The Berlin Brick Co., Berlin, Conn., have built more racks and installed an Anderson conveyor. Mr. H. E. Doty, the manager, states that the output this year would be about six million.

The Bridgewater Brick Co. of Bridgewater, Mass., has made some improvements during the past season. They are using a new electric shovel in the clay pit and have adopted a feeder that feeds the clay into the disintegrator.

The E. L. Cook brick plant, State Farm, Mass., suffered a loss by fire. The engine room was destroyed and a new engine had to be purchased. The yard is now in operation and during the past three weeks one machine has made forty-eight thousand bricks.

Many improvements have been made on the yard of the Stiles & Hart Brick Co., Taunton, Mass. One of these is the use of a Plymouth gasoline locomotive in the hauling of clay, another is the automatic feeding of the clay into each brick machine. They are running two machines, making ninety-six thousand per day.

Yards at Holyoke. Mass., have been running to full capacity. The Lynch Bros. Brick Co. have doubled their capacity, installing recently a new brick machine. The Hampshire Brick Co. has bought the yard at Williamsett, Mass., from John Prew Estate. This as well as their yard at Hadley Falls, is under the management of John F. Lynch. The Holyoke Brick Co. has installed an Anderson conveyor, which has been giving them very satisfactory service.

The Boston Brick Co.'s new plant at Gonic, N. H., is in full operation and making fifty thousand struck brick and fifty thousand Harvard brick in seven hours. They have an up-to-date plant equipped with Standard Steam Dryers, the Parry system is used in the burning. They are furnishing high grade face brick for the Grace Hospital, New Haven, Conn., and a large new hotel being built on the Board Walk at Atlantic City, N. J. The new plant was built under the supervision of Robt. A. Parry.

CUT YOUR BELTS SQUARE AND GET BETTER SERVICE AND LONGER BELT LIFE.

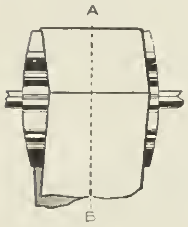
An Engineer's Suggestions for Eliminating Much Trouble and Wastage of a Valuable Product.

By F. D. Rich, Sales Engineer, Crescent Belt Fastener Co.

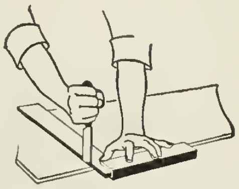
HUMAN NATURE plays an important part in getting service and longer life out of a belt. It is human nature to do things in what seems the "easiest way," not always realizing it is often the most expensive and usually the most laborious. This applies particularly to cutting belting and to joining it.

Cutting the ends of a belt to put it into service seems such a simple thing that often belt men do not give it the consideration necessary to do a good job, and much of the difficulty with otherwise good belts is due to their not being cut and joined accurately. When you know how, it is as easy to make a belt joint that is practically endless as it is to do it by careless rule-of-thumb methods.

When a belt runs "wobbly" or races back and forth across the pulleys, it is not giving its best service nor can it have its longest life. If you have a belt that is repeatedly jumping off the pulleys, you are paying about twice as much as you should for it, because its life is being shortened and you are paying for power that is lost and production that you don't get, as well as for unnecessary time and labor in fixing things up.



No. 1—A Belt Joined This Way Won't Run True and Even.



No. 2—Hold the Square Tight Against the Edge Until You Have Cut All the Way Through the Belt.

Provided that its ends are cut square and it is joined with care, a belt can be made to run as straight as an arrow if the pulleys are lined up true.

Don't guess at cutting your belt ends. Use a square, always—and use it with care. If you do not use a square, one or both of the ends will be cut unevenly or irregularly, which absolutely prevents a smooth-running joint. Even the use of a straightedge does not insure the perfect results obtainable when you use a square, for the slip of a fraction of an inch will bring the belt ends together at an angle, as shown in illustration No. 1.

This results in the belt "shimmying" on the pulleys, which is bad for the belt and impairs its service, for as it moves from side to side, the line of direct pull, "A-B," moves from one side of the belt to the other, imposing shifting and irregular strains, which no belt can stand indefinitely.

There is only one way to assure correct results. That is to use a belt square and to keep it in place until you have cut all the way through the belt. Don't just scratch the surface and then hack through. Cutting to the square assures an even cut all the way through the belt and all the way across. It means that the belt ends will meet in a tight, butt, evenly-running, flush joint.

Be sure your knife is sharp. Wet the point of your knife occasionally, as it cuts more easily when the blade is wet.

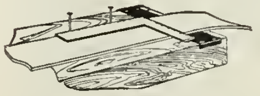
For belts up to 15 or 18 inches wide you can use the ordinary square. Press it firmly against the edge of the belt, and, when cutting, hold the knife vertically. See illustration No. 2.

When a number of belts have to be cut, a good stunt is to drive two nails in a large block of wood, and against these set the edge of the belt and the edge of the square, as shown in illustration No. 3. This prevents either the belt or the square slipping. Some men tack a slip of leather or a piece of old belt on the end of the block to protect the point of the knife as it comes through the belt.

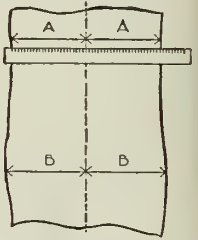
Wide belts are more difficult to square correctly, and the difficulty is often increased by slight variations in width, which throws the square out. To overcome this, the method described below is the best to assure perfect results.

At any point near where you are going to cut the belt, measure across and find the center, as at "A-A," illustration No. 4. At any distance back of this, 2, 3 or 4 feet, find the center again, as at "B-B." Between these two center points draw a clean, sharp line. This marks the center axis of the belt. At any point on this line other than where your belt clamps will come, take a point, "C." See illustration No. 5. Then, using a square as illustrated, draw a line, "D-C-E," at right angles to the axis and all the way across, from edge to edge.

It is sometimes easier to draw this line by marking the points "D" and "E" and then placing a straightedge through the points "D-C-E" to draw the line. See illustration No. 6. This is a "base line" to measure from after the belt is in the clamps. Don't cut on this line.



No. 3—This Makes Squaring Simple and Positive.



No. 4—Find the Center by Measuring from the Edges in.

After the clamps have been put on and the belt brought into position, you can determine exactly where you want to make the cut. Then measure forward from the line "D-E" an equal distance on each side of the belt to the cutting point. You can use calipers and measure over the belt clamp or run your ruler through the edges of the clamp.

When a belt can be cut before it is put in the clamps, this method of squaring is equally valuable, the line "D-E" being placed at the cutting point.

As a matter of convenience, always cut one end of the belt square and get it ready for making the joint before putting the belt into the clamp.

Remember that when you are doing a thing, it is much easier to do it right than to do it over. This applies to making the joint as well as to cutting the belt.

Therefore, it is best when joining a belt to do so in a way which is permanent and which insures the belt's most satisfactory service.

The foregoing cutting illustrations and instructions are reproduced by permission from one of the recent publications of the Crescent Belt Fastener Co., who do not sell belt squares, but advocate their use, because perfectly square, evenly cut belt ends are essentially important to good service.

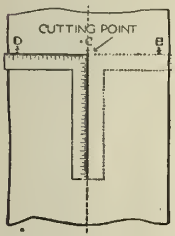
The illustrations in this new Crescent bulletin show how a belt joint can be made with Crescent plates and Crescent rivets in a way which maintains the maximum strength of the belt without any punching out, cutting or weakening of the belt fibers.

A typical Crescent joint is shown in illustration No. 7. The Crescent rivets which attach the belt to the Crescent plate merely separate the lengthwise, power-carrying belt fibers, but do not destroy or weaken them.

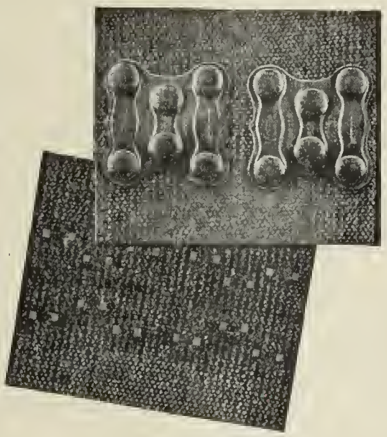
When the clinch of the Crescent rivets is pounded down, the prongs sink beneath the belt surface so no metal comes in contact with the pulley, and consequently no part of the Crescent joint is subject to wear or to crystallization.

The Crescent plates are arched so that the Crescent joint fits the pulleys perfectly and runs the same as endless; in fact, it is endless on the pulley side for all practical purposes, and the strain is distributed evenly and equally across the entire width of the belt. On account of the patented construction of Crescent plates, there is no tendency toward cracking or breaking of the belt back of the joint.

The Crescent method provides for easily and quickly taking up the slack or for removing and rejoining the belt. This is done by removing the Crescent rivets from one side of the belt only with a Crescent rivet extractor, as shown in illustration No. 8. When the slack is cut out the belt is rejoined with a new row of Crescent rivets—the work of a moment and of slight expense. A belt may be rejoined any number of times at the same place, where it is necessary to occasionally remove the belt.



No. 5—Square by Working from the Center Line and You Won't Go Wrong.



No. 7—The Outside and Pulley Side of Completed Crescent Joint. Strain is distributed Evenly and Equally Across Entire Belt Width. No Metal Comes in Contact with the Pulleys to Cause Noise or to Wear the Curvature of Crescent Plates Makes the Crescent Joint Fit Pulleys Perfectly.

An illustrated wall chart giving all technical data and interestingly illustrated will be sent to any readers of The Clay-Worker upon request to the Clay Products Service Department of the Crescent Belt Fastener Co., 381 Fourth avenue, New York.

SAND-LIME BRICK PRODUCTION.

Preliminary reports of the U. S. Geological Survey show that the total production of sand-lime brick in 1919 amounted to 145,000,000 brick, valued at $1,725,000. This is a gain as compared to 1918, but it is not up to the pre-war maximum, which was attained in 1916, with a total of 227,344,000 brick. The total value for 1919, however, exceeded the pre-war maximum value because of the better prices.

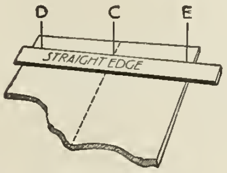
Of the output, 142,755,000 was common brick, the balance being face brick. The average price received for the common brick was $11.82, compared with $8.94 in 1918. The average price of face brick in 1919 was $16.48, compared with $11.35 in 1918.

PROFIT SHARING UNDER FIRE.

Profit sharing ideas and bonus plans which have been ardently advocated for some time past are now meeting the cross fire of objection—we are beginning to hear the other side, about the objectionable features.

There is nothing unusual about this. One of the things history has taught us is that when an idea or theory becomes popular it attains a certain height of popularity and then reaction sets in and the pendulum swings the other way. This is because in the enthusiasm of advocating new ideas people are led to expect too much of them and when disappointment comes reaction and criticism follows.

That is what is happening now in connection with ideas of profit sharing and bonus paying, which has not only appealed to the public mind, but these things have been resorted to by employers as preferable to the extremely high wages which would have been called for without them. The attitude of the far-seeing employer is that the high cost, high prices and high wages peak is an unnatural condition which is temporary rather than permanent and that the re-adjustment will come easier through trimming down bonuses than through trimming down wages.



No. 6—On Wide Belts Use a Straight Edge When You Haven't a Large Enough Square.

No. 8—Removing Crescent Rivets with a Crescent Rivet Extractor to Shorten or Remove Belt.

It is well enough, however, for us to take into consideration the objectionable features which have been developed by profit sharing plans in action. Thoughtful men are telling us that the profit sharing idea is unsound in principle because often the extra profits in a business do not come so much from the interest and skill of the workers as from the foresight and good judgment of the business managers, or some fortunate circumstances such as favorable location or other favorable conditions.

This is good logic and there might well be coupled with it, as a companion piece in reasoning, the statements made in these columns heretofore that one good way to share in the profits of the business is to own some stock in it. Some plan by which the way can be made easy and employees encouraged to buy stock in the business which employs them means good for the employees in addition to the profit sharing that will come therewith. It begets habits of thrift, leads to property acquirement, which safeguards a man's family, makes him a better citizen and puts him into a better relationship generally with the institution for which he works.

The war period and the situation growing out of it made an unnatural condition all around and naturally makeshifts were resorted to and ideas were taken up without deliberation in the effort to meet the urgent needs of the situation from day to day. The first development was high wages all around. This started with the automotive industries and the war industries and government contractors working on the cost plus basis. They not only bid against the industrial world for help and material, but they bid against each other and as a result wages went skyward and carried with them the cost of living and the necessity on the part of industries generally to immediately devise some way to meet the situation.

Wages were raised but this did not answer for any length of time because of the shortage of help and the feverish condition generally. Demands for further increases led employers to the adoption of bonus plans and profit sharing ideas as preferable in tiding over the abnormal period to reckless advances of wages. We will probably realize, too, in the final analysis, that while these things are economically unsound they have served to tide industry through a period of stress better perhaps than if we had undertaken to stick to flat wages.

It is practically impossible to bring out an objection-proof relation between capital, labor, wages and profits. There is involved here a third element, the genius which develops an enterprise, and the relationship varies with industries and with individuals. It is not within the province of human accomplishments to devise a perfect system of division in this matter. There is danger however that bonus paying and profit sharing will tend to maintain prices at a fictitious level and for this and a number of other reasons which might be brought forward some discouragement of profit sharing ideas is to be expected and should be welcome.

In the general re-adjustments of industry to what we might term normal conditions the most trying problem we have before us will be that of labor and wages. This problem has been made more acute by the automotive industries which have in the past over bid all competition both for labor and for material, simply adding the increased cost to the price of their machine. They will continue to aggravate the situation, too, just so long as they can find a ready market for their output. When production in automatic lines gets to exceeding the demand, then and then only will they settle down to the same natural basis as other industries where competition has in the main been keen and profits less spectacular.

The law of supply and demand is just as effective in the matter of labor and wages as in the field of commerce and it was the same shortage of labor that led to high wages which also produced bonus plans and profit sharing. Right now there is an indication that the labor supply may overlap the demand. When it does then re-adjustment will be easier and we will settle down to a more sensible solution to the question of wages and profit sharing.

A PLAN FOR SOLVING HOUSE SHORTAGE PROBLEM.

On Wednesday, September 8, there was a joint meeting of the Allied Building Contractors' Association and the Evansville Real Estate Exchange, to work out a plan for the relief of the house shortage problem in that city. A plan was suggested by Clifford Shopbell, a well-known architect. The plan was a modification of the plans used in Chicago and East St. Louis, Ill. Many of the details will be worked out locally, however, in order to meet conditions as they exist in Evansville. The plan as tentatively proposed is for each employer in Evansville to be assessed $10 for every man that he employs. The fund created in this manner will be used as an advertising fund and to cover a deficit and allow workingmen of the city to build and own their own homes. The employers would be secured from loss by a bond issue. In actual operation the plan would work in this way: A man building a home can borrow 60 per cent. of its cost from the banks. He must have 10 per cent. of the cost himself to start building. This leaves a deficit of 30 per cent., which the fund created by the assessment would cover. Thus a man with $200 would erect a $2,000 home, borrowing $1,200 from the bank and $600 from the city building fund. He would give his note, bearing 6 per cent. interest, to the fund, and these notes would be the basis for the bond issue to secure the employers against loss. While this plan may be modified, in the opinion of Clarence P. Hammerstein, secretary of the contractors, it will be followed in many respects. Estimates of the amount the levy upon employers should raise have not been made, but it is believed that at least $100,000 would be secured. The plan would allow workers to build their homes and pay back the sum on easy installments, at the same time solving the housing problem for the city. Henry C. Kleymeyer, president and general manager of the Standard Brick Manufacturing Co., is among the business men of Evansville who have worked on plans for the past several months to help relieve the house shortage problem in that city.

A FISH STORY IN CONCRETE.

THERE IS A consular report from Brest, France, about the making of hollow concrete blocks, with cinders or clinkers as the aggregate, which reads more like a fish yarn than a serious report on industrial activities. The report says:

"The blocks are made in molds, as are cement building blocks in the United States. The materials used are sand, lime and cement, with a base of crushed coal clinkers. The lower grade of blocks also contains some coal cinders.

"These blocks are made in several sizes. The size 10x20x6 inches sells for 237 francs per hundred blocks.

"The clinker building blocks are particularly used in pavements, walls, floors or cellars, warehouses, stables, garages, rough buildings and small residences. The blocks have the advantage over brick for building material in that they are cheaper and facilitate quick construction. They take plaster on the interior and stucco on the exterior, where it is desirable in buildings.

"However, the outstanding advantage of the clinker block over the brick in the Brest district is the capacity of the former to withstand the great humidity of this climate, that causes brick walls to drip water on the interior of houses."

Think of cinder concrete being spoken of as a better material in a moist climate than well-burned brick! But what's the use of extensive comment? The story speaks for itself.

TIMELY SUGGESTIONS.

As winter draws near, preparations and plans should go forward for clay storage at those plants where steady winter operation is contemplated.

Every clayworking plant has its own peculiar problems of working, handling and burning, but scientific analysis will help solve them. In each case there is enough knowledge available to-day that there is very little excuse for poor burning.

One bit of advice that is logical and easy to give, but is sometimes hard to carry out, is that of "Buy the truck that fits your work."

BRICK NEWS FROM THE NATIONAL CAPITAL.

WITH BUILDING OPERATIONS on nearly all large projects practically at a standstill in Washington, local manufacturers of brick are facing the possibility of a complete shut-down of their plants, according to reports given your correspondent. Thousands of brick intended for construction of numerous important projects in this city are daily being dumped beside the kilns in some of the plants, while at least one manufacturer has virtually suspended production.

Brick manufacturers of other cities who have local branches here are experiencing difficulty in having consignments shipped to Washington, due to the serious transportation situation. This aspect is said to be somewhat offset, however, by the lack of demand for other building materials.

With the suspension of work on large new structures practically general, brick and tile manufacturers are meeting with a drastic reversal of conditions which existed during the war and since, when brick products of all kinds were scarce. The shortage at that time was acute and many building operations were postponed as a result.

This condition has passed, and the other extreme prevails, brick interests state. At the offices of West Bros. Brick Co., on Fifteenth street, the situation was painted pretty black, and the prediction was made that the production of brick at the Virginia kilns of the firm, just across the Potomac river, may soon be suspended altogether. It was pointed out that the space around the kilns is literally obstructed with great piles of brick destined for local and near-by contractors, who are unable to use the material at present and who probably will have no use for it for some time in the future.

Other brick firms corroborated the fact that the condition is general. The Virginia Brick Co., one of the largest brick concerns in this section of the country, among others, pointed out that there was no cause for real alarm, as in other cities, regarding a brick shortage. This firm has good reserves of coal and other fuel on hand, and is not troubled by transportation difficulties, it was said.

That Washington stands apparently alone in this respect is testified to by information filed with the Common Brick Manufacturers' Association of America, in response to questionnaires sent to more than a hundred of its members.

Announcement is made here by F. T. Miller, economic expert and director of research for the committee of Congress on reconstruction and production, with regard to Britain's housing shortage, that twenty years will be required to supply enough bricks to rehabilitate that country, even though the output has been increased over 250 per cent.

A number of interesting and important tests have just been completed by the United States Bureau of Standards on fire clay tile subjected to a temperature of 1,350 degs. C., in order to determine the modulus of rupture and the deformation. The surprising fact was brought out that these tiles, in spite of their weight and bulk, cannot support any appreciable load beyond their own weight, and in the case of long spans it was found that the tiles broke without any imposed load. The investigation, therefore, the bureau states, points to a rather serious situation, and it is quite possible that for load-carrying refractories of this shape entirely different compositons and combinations of clay and grog must be resorted to.

.The chief of the Bureau of Public Roads, Department of Agriculture, has announced that combined federal and state expenditures for road building may reach $250,000,000 for the present fiscal year. The last installment of federal aid funds, totaling $100,000,000, became available on July 1 last—$25,000,000 from the 1916 appropriation and $75,000,000 from the 1919 appropriation. States are now paying more than 50 per cent. of the cost, which, combined with the fact that advanced plans for road work have to be made with the states, makes early congressional action necessary in order to avoid a tie-up of work.

The United States Geological Survey estimates that the quantity of silica (refractory) brick produced in the United States in 1919 was the equivalent of 216,363,000 9-inch brick, and was valued at $11,798,000—a decrease of 120,199,000 brick and of $8,190,000 from 1918. The average price per thousand decreased from $59.39 in 1918 to $54.53 in 1919. The output in 1919, though much smaller than that in 1918, was much larger than that in any year prior to 1916, and the value in 1919 was much larger than in any year prior to 1917.

ALTHOMAR.

ORGANIZE FIRE BRICK COMPANY.

An enthusiastic meeting was held in the rooms of the Chamber of Commerce, Portersville, Cal., August 28th, during which all outstanding stock of the Knight Fire Brick Company was absorbed, thus providing the necessary funds for the enlargement of Portersville's most important manufacturing industry. This company was established two years ago, and is already manufacturing brick for various purposes. The materials found about Portersville are ideal for fire brick and the company has large orders from various parts of the country which they were unable to fill because of inadequate equipment. The meeting was held for the purpose of financing the company, and thus enable it to buy the new equipment necessary. Orders are to be placed at once for the new machinery needed for the manufacture of brick on an extensive scale. The meeting was addressed by G. H. Weitz, of Fresno, Cal., R. S. Elliott, W. W. Lindley, Fred J. Martin and other local men.

WM. PAUL GATES SUCCUMBS.

The eldest son of William D. Gates, known to his college friends and many acquaintances as Pat Gates (William Paul Gates), died at Terra Cotta, Ill., August 30th, after an illness extending over several years.

He was born at Hillsdale, Ill., on March 16, 1879, but his boyhood days were spent at Terra Cotta and Chicago, Ill. He attended Chicago Manual Training High School and later the Ohio State University.

After leaving the University, he worked for a short time in a machine shop in Columbus, Ohio, and then returned to Terra Cotta, Ill., where he took up laboratory work and was later made superintendent of the factory. It was during his connection with the plant that the now famous teco ware was developed and the art of terra cotta manufacturing advanced to the making of enameled or glazed surfaces. At about this time he became interested in the problem of distilling turpentine from refuse pine wood in Alabama, where the Gateses usually spent their winters. He resigned his position at Terra Cotta to take up this work, being connected with the Westport Chemical Company. He was with this company three years, during which time he designed and built their plant and then returned to Terra Cotta, but soon enlisted in the navy, where he became chief machinist mate. After serving three years, he returned to Terra Cotta as superintendent of the plant, and spent the rest of his life there.

He had charge of the research department at the Terra Cotta works, and at the time of America's entrance into war, he spent many an hour at difficult study and work on aeroplane carburetors and supercharges. It was while he was in Washington, D. C., in connection with this work, that he suffered his first attack of the illness which later required an operation, from which he never fully recovered.

His gracious personality endeared him to a host of friends. He was married to Miss Anna Larson, of Chicago, in 1910.

Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

Title registered, contents copyrighted.
THIRTY-SEVENTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " "	10.00
Ten copies, " "	15.00

Foreign subscriptions 65 cents additional.

☞Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
226 East Ohio St. T. A. RANDALL & CO. [Inc.], Indianapolis.

Vol. 74 September, 1920. No. 3.

CURRENT COMMENT.

Brickmaking is catching up.

* * *

Vacations are good for us—and so is work.

* * *

Selling the product is the next order for clayworkers.

* * *

Freight figuring is not a popular pastime, but it is a present necessity.

* * *

Advertising of structural clay products is now being done in a better as well as a bigger way.

* * *

Failure to keep promises is a form of moral weakness that in time will weaken the reputation of the best of men.

* * *

To round out the brick porch idea right it should have a clay tile floor, and brick men should help boost the flooring idea.

* * *

The gravity conveyor has saved a lot of burdensome work around brick plants, and the way to make it save more is for more people to use it.

* * *

Common brick leads the list of clay structural materials, but hollow building tile and face brick are climbing the production ladder at a good rate.

* * *

What is featured as the biggest thing in profit-sharing is a plan being put into effect by the International Harvester Co., which makes a 60-40 division of profits with the workers, after paying 7 per cent. dividend on the stock. That is, the workers get 60 per cent. of the profit, above that amount, and the stockholders 40 per cent. The scheme involves developing the thrift habit by paying part of this in stock, common stock to officials and preferred stock to workmen.

* * *

In the business of selling, as in the practice of law, it is the plaintiff that must furnish the proof and convincing argument.

* * *

The laws of common honesty cannot be set aside for the benefit of any class or individual; they apply to the employe as well as to the employer.

* * *

Increasing the production and improving the economy of a clayworking plant often depends more upon the sort of engineering service secured than upon expenditures for new equipment.

* * *

Coal conditions here, we are told, are much better than they are in other countries, but that does not alter the fact that conditions here are not what they ought to be, and need improving.

* * *

Two serious handicaps to pushing brick in residential building operations are the scarcity of qualified bricklayers, and high wages demanded, the maximum of which so far reported is $1.50 an hour in Pittsburgh.

* * *

The great problem with many a brick plant manager is how he may develop an understudy to take his place at times, or get his working force so well organized and trained that things will go smoothly when he wants to take a few days off.

* * *

The postponing of much of the home building contemplated last spring makes the opportunity better for pushing clay products, because later there will be more material available, and by waiting and thinking it over the home builders will realize that it pays to build for permanence.

* * *

Students of accident prevention are now telling us that it is not carelessness which causes accidents to skilled workers, but rather the acquiring of skill itself, which in its reaction upon the nervous system produces that sort of absent-mindedness which leads to accident and which we call carelessness.

FOREMANSHIP.

This is a day in which good foremanship looms large because of problems of readjustment, both in men and methods. Also, there is noticeable an awakening realization that industrial success depends in a great measure upon team work and foremanship. The indications are that during the next few years quite a lot of the preaching and writing and industrial training will be directed toward good foremanship and the things which go to make it.

FREIGHT RATES AND TRUCKING.

There seems to be no question in the world but what the higher freight rates, on top of the traffic congestion among the railroads, will result in the railroads losing quite a lot of their short-haul freight business to motor trucks. It is a peculiar fact, however, that the greatest possibilities here are not always what they seem. Take brick, sand, gravel and other heavy material, for example, and because of its weight and the low freight rates, as compared with other material, the chance for economy in motor trucking in competition with rail shipments is not as big as it looks. And often it is not anything like as easy to meet rail competition in trucking brick as it is to meet rail competition in trucking planing mill work, furniture and a multitude of items which weigh less, but take a much higher freight rate. There is an interesting problem here for the clayworking industry to figure out, that of the possibilities of motor trucking, say, as far as fifty miles, as compared to rail shipping.

COAL AND STRIKES.

One who has followed the coal situation cannot help but feel impressed with some baleful significance or connection between the coal shortage and a series of strikes which have hampered either coal production or transportation. These strikes, as a rule, have been labeled as outlaw strikes. They have included switchmen's strikes at various terminals, alternating with mine strikes in certain districts, and they have prevailed and taken place always when it looked like transportation would be improved and the coal situation made easier. What has happened here is impressive of the need for the rest of the country to follow the Kansas example, put a ban on strikes and set up a court of industrial relations.

EXPLOITING THE FIREPLACE.

In Tilecraft for August there was an interesting story of a traveling fireplace which involves the exploitation of clay products in an unusual way. It was the fitting up of a railway car as a sort of farmhouse. The mantel and tile of the fireplace were furnished by the Weiffenbach Marble and Tile Co., of Dayton, Ohio, and various other lines of manufacturers contributed to its equipment, including the electric lighting.

The Ohio State University, in co-operation with the New York Central lines, sent this home demonstration car through the rural districts of Ohio, after which it was taken to Indiana under the auspices of Purdue University, on a tour of about 4,000 miles.

This traveling home, exploiting among other things clay products in the construction of the earmarks of home, the fireplace, was shown to 60,000 farm people.

CANCELED ORDERS.

Quite a stir is being made in the business and industrial world these days about the cancellation of orders and contracts placed for all manner of goods and products. There has not been as much of this in the clayworking industry as in some other lines, but there has been some of it even there. It is the natural result of overbuying on the one hand and a declining market on the other. It was to be expected, and it will happen again under like conditions. We should strive to take a lesson from it, a lesson against inflation, speculation and a number of other business evils. Cancellations may be bad business practice within themselves, yet they are but a fruit of other bad acts which precede them. That is the real lesson to get from the present situation, a caution against speculation and reckless buying.

BRITISH CHINA-CLAY.

England is the only one of the old countries exporting china-clay extensively, and in pre-war days about half of the English exports came to the United States. During the war period there was considerable development of American kaolins and various mixtures were developed which served to take the place of the imported English clays. Right now, however, there is an interesting question of which will win out in competition, whether the development of American clay will continue to progress and cut down the imports, or whether the English clay will again attain prominence in the market here. England used to export clay to Russia, to Germany, to Belgium, Netherlands, France and Italy, as well as to the United States. Part of these countries are not now in shape to import heavily, consequently there will likely be heavy concentration of efforts to sell the British china-clay, which is exported, to the United States.

LUBRICATION.

In this day of ball and roller bearings to help reduce friction, we are also developing new and higher knowledge of the science of lubrication as applied to old metal-lined bearings. The automobile and airplane industries have contributed wonderfully to scientific development in connection with lubricating oils and greases, and now other industries may profit from it if they but take the trouble to keep informed on what is doing and what is offered in the way of lubrication. Research work by the Standard Oil Company and some of its competitors has resulted in interesting development of lubricants for special purposes. This is a good subject to have a heart-to-heart talk with some live oil salesman about, so that you may put your lubricating problems up to the scientists of the oil industry, for the proper solution of these may save you power and money and wear and tear on machinery.

DEFECTIVE CHIMNEYS AND FLUES.

Quite a lot has been said in these columns, first and last, about chimney flues and flue linings, but so long as there are defective flues and fires resulting therefrom there is need to keep saying things. For this reason there is offered herewith the following comment from the official publication of the National Board of Fire Underwriters:

"When chimneys are unlined and improperly constructed and are not built from the ground up, with due regard for the avoidance of contact with wooden beams and joists, there is the ever-present likelihood of serious fires. In some parts of the country the reprehensible practice prevails of building chimneys with the bricks on edge, and only one brick in thickness, with the result that openings soon develop and allow the escape of sparks."

"KEEP THE QUALITY UP."

The leading article in a recent copy of the Laclede Christy Bulletin is a plea to keep the quality up, and while this has to do more specifically with fire clay products, the logic applies just as well to all clay products. It may be that in some instances the urgency of the demand has led to some relaxing on quality points. If so, it is time to snap out of it. The trade is getting caught up with production and should turn thoughtful attention to maintaining the quality of its product. No matter whether it is common brick, face brick, hollow building tile, drain tile, sewer pipe or fire clay products, quality counts in the final analysis, and the man who expects to stay in business and keep a good list of satisfied customers, and maintain a price that will yield profits, must zealously guard and continuously seek to improve the quality of his product.

CLAY MINING IN 1919.

A supplementary report following the regular report on the clayworking industry by the U. S. Geological Survey tells the story in brief of clay mining in 1919—that is, the mining and marketing of clay as a raw material for the clayworking industry, aside from the clay used direct by the industry itself.

The quantity and value of raw clay sold by miners to manufacturers decreased some in 1919 as compared with 1918. This was expected because the war period made a special demand for certain kinds of clay which has since slowed down. There were three kinds of clay, however, which showed an increase. These were kaolin, paper clay and ball clay.

The clay commonly marketed in this manner is classed as kaolin, paper clay, slip, ball, fire, stoneware, and miscellaneous. The largest tonnage is in fire clay, which has run about 2,000,000 tons in a year, but fell a little short of this in 1919. Paper clay comes next, followed by ball clay, stoneware clay and kaolin in the order named.

The total tonnage of all clay produced and marketed independent of the clayworking plants was 2,363,000 tons, valued at $7,077,000, which made an average price per ton of $2.99, a mighty low price for a highly useful raw material. The highest prices were realized for kaolin, which shows an average price of $10.95 per ton, followed by paper clay, with an average price of $8.25. The lowest prices were on stoneware and miscellaneous clay.

The clay imports for the year consisted of 204,853 tons, valued at $2,157,338. The imports seem to have been composed mainly of kaolin, which was imported at an average price of $10.88 per ton.

OLD SEPTEMBER.

Old September pleases me,
Like the way he tints a tree,
Like the way he comes to call
With some trinket for us all,
In the pockets of his vest.
Bringin' things we like the best,
Apples, peaches, pears an' plums
Load the table when he comes
An' for something extra fine,
Grapes are ready on the vine.

Old September doesn't show
Wrinkled face or hair of snow,
He is like some men who hide
Age beneath a glad outside,
Coverin' up his lines o' care
With a smile that's always fair,
Joinin' every song that's sung,
Just as youthful as the young,
Ready for a round o' fun
Or the task that's to be done.
Old September never grieves
'Bout the fallin' of the leaves,
Never grumbles or complains
'Bout his numerous aches an' pains.
Just goes traipsin' round the place
With a bright an' smilin' face
Splashin' colors here an' there
Till there's beauty everywhere.
Scatterin' happiness an' cheer
Till the whole world's glad's he's here..

When old age gits hold o' me,
Like September I would be,
Want to keep up with the throng,
An' go marchin' right along.
Want to putter round the place
With a smile upon my face
Sharin' in the work an' fun
Just as young as any one,
When old age gits hold o' me,
Like September I would be.

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prevents heat losses from crowns and walls of kilns, boilers and all types of heated equipment.
Write for Bulletin F54 describing its advantages and application.
CELITE PRODUCTS COMPANY
New York Cleveland St. Louis
Philadelphia Detroit Los Angeles
Pittsburgh Chicago San Francisco

EAGLE "MIKADO" PENCIL No. 174

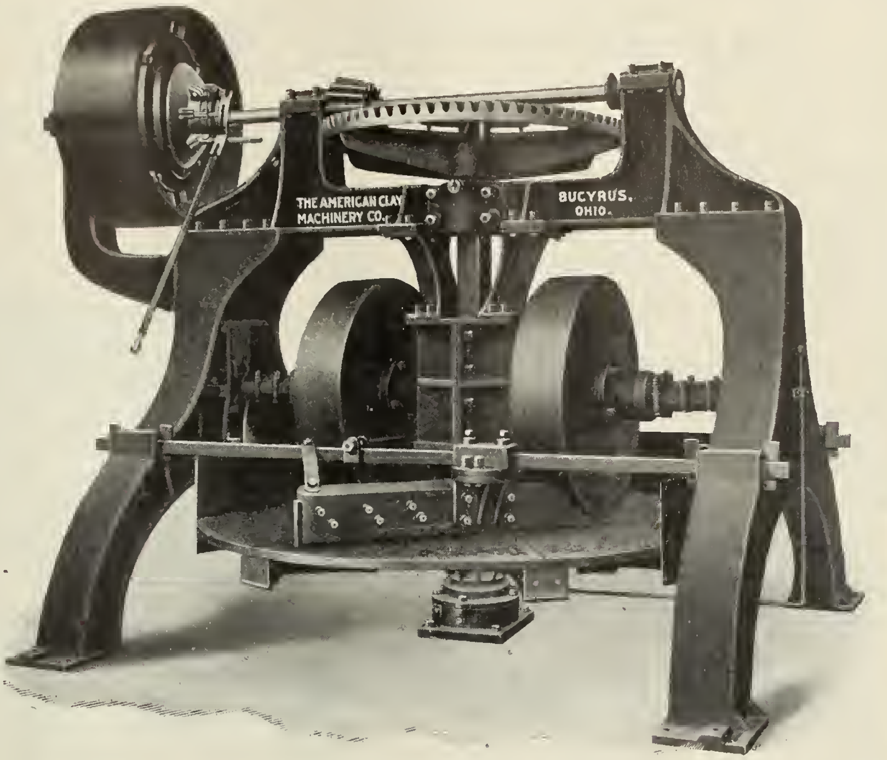
For sale at your dealers Made in five grades
Conceded to be the finest Pencil made for general use
EAGLE PENCIL COMPANY NEW YORK

AMERICAN 9 FOOT DRY PAN

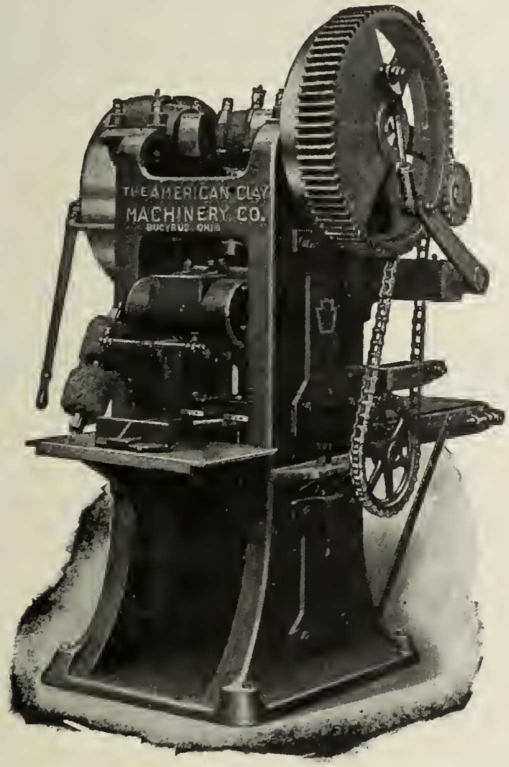
The American 9 Foot Dry Pan is probably the best known pan on the market. It has made a splendid record for performance and low cost of maintenance.

These are only two of the points in which American pans excel

Get the Nine Foot Pan Bulletin for complete details.



American Nine Foot Dry Pan.



American No. 292 Repress.

American No. 292 Repress

A repress should be strong, simple, quick acting, accurate and reliable. In all these features the American No. 292 Press excels.

Those who know it best are the most enthusiastic in their recommendation.

Ask for the No. 292 Bulletin, it will help you to make a good repress investment.

We build every machine a Clay Worker needs.

The Hadfield-Penfield Steel Company

Bucyrus, Ohio, U. S. A.

Formerly

The American Clay Machinery Co.

Put This Kiln on Your Pay Roll

If you put the Haigh Kiln on your Pay Roll it will not only pay its own salary but will pay all the rest of the employes.

That seems like a big job but the Haigh Kiln is big.

You really owe it to yourself to look into the advantageous features of the Haigh Kiln.

Besides paying its own way it insures better ware. It acts as a pace maker throughout the whole plant. It saves on fuel and saves on labor.

We have some attractive printed matter on this kiln. It gives attractive facts and figures. Send for it.

Our American Waste Heat Dryer, makes your drying cost you nothing. It is installed in conjunction with the Haigh or other kilns.

Coal costs too much to justify any waste at all. We save half the fuel

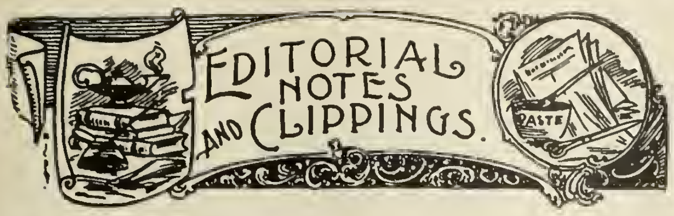
The Hadfield-Penfield Steel Company

Bucyrus, Ohio, U. S. A.

Formerly

The American Clay Machinery Co.

EDITORIAL NOTES AND CLIPPINGS.



Monarch Fire Clay Company was incorporated at Portland, Ore., with $100,000.

Charlotte Clay Products Company was incorporated at Charlotte, N. C., with $125,000.

Chas. Young, of LaSalle, Ill., is now manager of the Chicago Fire Brick Company's plant at Ottawa, Ill.

The Summittville Drain Tile Co., Summittville, Ind., has increased its capital stock from $100,000 to $135,000.

C. B. Mayhugh, of the Star Brick & Tile Co., contemplates building a plant for the manufacture of tile at Arlington, Wash.

The U. S. Pottery Association, East Liverpool, Ohio, offered 8,000 general potters a wage increase of from five to ten percent. They had requested twenty-five.

The Continental Clay Products Co., 1802 Whitmore avenue, was incorporated at Baltimore, Md., with $75,000, by E. Taylar Chewning, Robt. W. Williams and Fred B. Ober.

The Atlantic Brick Manufacturing Co. was incorporated at Mays Landing, Ga., with $200,000. G. L. Low, F. R. Mears, of Bloomsburgh, Pa., and R. L. Finlay, of Brooklyn, were the incorporators.

The Waco Brick Company, Waco, Tex., recently completed, is in operation and turning out 30,000 brick daily. The plant is owned by J. S. Harrison, H. J. B. Earl Lud and Newt. Williams. It cost $50,000.

The St. Claire Brick Company of St. Claire, Mich., in addition to making brick, will manufacture drain tile in sufficient quantity to enable the carrying out of the county's drainage program and to care for local trade.

Readings, Panzor & Martin, architects, have been commissioned to prepare plans for a new plant for the Wheatley Pottery Company, to be built on the triangular acreage lot on Lester road, in Pleasant Ridge, Ohio.

Dr. W. S. Sheets, of Beaver Falls, Pa., has sold twenty acres of his farm above Eastvale, lying along the Erie and Ashtabula Division Railroad, to a company of men from southern Ohio, who propose to erect a large brick plant on the site.

The Kramb Brick & Tile Co. of Oak Harbor, Ohio, due to the scarcity of coal, has found it necessary to send a force of men to the woods near their plant to prepare fuel for the burning of their kilns. Wood will be used for fuel until the coal situation is improved.

To meet the growing demand for stoneware products in the western states, the Inland Empire Pottery Plant of Spokane, Wash., has installed machinery for the manufacture of jars and vases varying in capacity from one to thirty gallons. We wonder if raisin wine is being made in that section.

A fire started by sparks from the smoke stack, igniting the roof, almost totally destroyed the plant of the Pacific Stoneware Co. at Portland, Ore. A large supply of crocks and pots, stored in the back of the frame building, was not damaged. The most valuable of the machinery was damaged only by water. The loss is estimated at $10,000, partly covered by insurance.

The seven tile plants of the Mason City Brick & Tile Co., Mason City, Ia., are in operation and will be kept running night and day. Five hundred men are employed in these factories. Much difficulty has been experienced in the past few years due to shortage of labor. Mr. B. C. Keeler, the president, reports that the labor situation is much better than it has been at any time within the past few years.

The Lima Brick Company of Lima, Ohio, has been incorporated with $50,000.

The Alabama Brick and Tile Co. of Hollywood, Ala., has increased its capital from $10,000 to $75,000.

The North Missouri Clay & Mining Company, Jefferson City, Mo., has a capital stock of $25,000.

The Kittanning Brick & Clay Co., Kittanning, Pa., plans to rebuild its power plant, which was recently damaged by fire.

A large pottery is to be erected near Corona, Cal., by J. H. Bolon, of Oxnard, who recently purchased 160 acres of clay deposits from Architect Leo Kroonen of Corona.

The Dyer Coal and Clay Co. was incorporated at Dyer, Ohio, with $350,000. A. E. Baumgartner, J. F. Perkins, J. F. Rodger, J. F. Barbee and R. S. Barbee were the incorporators.

The Hazelton, Pa., Brick Company has installed two more kilns for additional capacity of 1,000,000 brick a month. The company was reorganized last winter and is backed exclusively by home capital.

The Standard Fire Brick Works at Empire, Ohio, which has been idle for several years, is being repaired and will be put in operation at an early date and will employ about fifty men. Eli Castner is the owner.

The Demex Floor and Wall Tile Co. was incorporated at Bloomington, Del., with capital of $2,100,000. This concern will manufacture bricks, tile, etc. John P. Cann, M. L. and M. B. Murphy were the incorporators.

Henry Hilgeman, formerly president of the Ft. Wayne Brick Co., died at Ashtabula, Ohio, Saturday, August 28. He was a life-long resident of Ft. Wayne, Ind., and one of the city's most prominent contractors and business men.

Preparatory work has been started on the erection of the plant for the Friderichsen Floor and Wall Tile Co., Independence, Mo. Mr. Friderichsen, general manager, expects to have the plant in operation by the first of January, when from fifty to seventy-five people will be employed.

Mr. M. G. Babcock, formerly of Mellon Institute and recently Ceramic Chemist of McCullough Dalzell Crucible Co., Pittsburgh, Pa., has resigned to accept a position in the sales department of the LaClede-Christy Clay Products Co., St. Louis, Mo., in their Pittsburgh office, 901 Oliver Bldg.

W. J. Callahan, who recently severed his connections with the Sharon Clay Products Co., is now general superintendent of the Alabama Clay Products Co., Birmingham, Ala. This company, in addition to building a new plant at Lewisburg, has also acquired the plants at Bessemer and Encley from J. W. Minor.

The pottery production of the East Liverpool, Ohio, district, which manufactures approximately 55 per cent. of the dinner ware used on American tables, is estimated to be about 75 per cent. of normal. Opening of rail traffic, enabling receipt of clays and other essential supplies, was an important factor in improving the situation.

The Hollingsworth Brick Co. of Athens, Ga., has been purchased by the Stevens Brothers & Co. of Stevens Pottery. The plant in Athens has a capacity of 60,000 brick daily. Mr. Walter Steapler, manager of the Stevens Pottery establishment, will manage the recently purchased plant. The pottery of Stevens Brothers & Co., Athens, Ga., has been considerably enlarged. The addition to the plant embraces the installation of more machinery and reconstruction of the kilns. This concern employs one hundred and fifty men regularly. It has a large export trade, particularly in Cuba and South America.

(Continued on page 266)

Written for The Clay-Worker.

PACIFIC COAST NEWS.

PACIFIC COAST building operations are heavy, brickyards have all the orders they can fill, and there is a big demand for brick and terra cotta building estimates, in Oregon and California.

Hollow tile construction is receiving more notice than usual, due to construction of government coast defense buildings at the Presidio, San Francisco, of this material, to cost approximately $1,250,000. The California Brick Co. is furnishing the material, which is being shipped now. The contractor in charge of construction is Harry E. Rake. The Red Cross Recreation Building and the Nurses' Dormitory, at the Presidio, have just been completed, of red hollow tile construction.

Although a good deal of work is in sight for the near future, several million dollars' worth of work which might be done now is being deferred because of the difficulty of floating municipal bonds. The sewer brick and tile trade is doing well; every plant is busy with orders for small jobs throughout the state of California, although there are no big jobs under way using that material. A large number of hollow tile and brick veneer residences are in process of construction in many of the interior towns, and a good demand is reported for building and partition tile. Fire and face brick is also in good demand, and terra cotta manufacturers are all behind in their orders. Large orders for hollow building and partition tile are being filled from Hawaii for government and private construction.

Since the railroad freight rate increase has taken effect, the temporary car shortage that had been noticed for several weeks prior to that time has eased considerably. This shortage is undoubtedly due mostly to rush orders for materials, to take advantage of the former rates.

San Francisco contractors and builders are making plans to meet a threatened demand of ten or twelve building trades unions for a further increase in pay. Unreasonable demands which would preclude future building operations will be met by the builders in solid front, and in case of a strike all work will be shut down indefinitely. All San Francisco bricklayers are idle now because of their demand on employers that a union inspector be employed to supervise construction of two Carnegie libraries. The demand was based on union rules that such inspector must be employed on all public work. The library buildings are being erected by private funds and are to be turned over to the city only after completion. In view of this the builders do not know where the money would come from to pay the inspector, they say. All the builders, backed by the Builders' Exchange, are presenting a solid front in this matter.

Establishment of a brick yard in San Francisco, to be owned by its workers, is recommended by the local union to the Bricklayers' International Union. This matter will be considered by the union's convention in Cleveland, Ohio, in October, it is announced.

Common brick manufacturers have as yet taken no action in consequence of the rail rate increases except to formulate a policy of making all future contracts read f. o. b. factory instead of naming a price for delivery at consumer's place. Fire brick prices are being raised $2.50 per thousand bricks, to meet the freight raise.

Construction has commenced in San Diego, Calif., on what will be, when completed, the largest pottery plant west of Ohio. H. H. Knowles is superintending construction for the Knowles, Taylor & Knowles Pottery Company, of East Liverpool, Ohio, the owners. It is thought that Los Angeles capital is also back of the project. Completion is expected next March.

Plans for the removal of a $300,000 pottery plant from an eastern city to San Jose, Calif., are being laid by officers of the company owning it, according to reports thought to be reliable.

Clay has been found in Napa, Calif., by a representative of the State Mining Bureau. Brick may be made on a large scale there as a result of a conference of bureau officials on the matter. Several new buildings for the Napa state hospital are planned for the near future, and brick may be made for these buildings, as well as for the market.

An exhaustive report on the Southern California clay industry has just been completed by the Los Angeles chamber of commerce. It purports to show that raw materials for manufacturing the highest grades of products are there in abundance, and that their development and utilization offers an opportunity for a profitable market.

The Matthews Construction Company, of Sacramento, began breaking ground for the new $200,000 Tehama county court house, at Red Bluff, Calif. The building is to be constructed of reinforced concrete, hollow tile and brick. Marble and tile will be used exclusively in the interior finish. The building will contain ample space for all county officers and court rooms, as well as a county library.

Plans are being prepared by Architect S. Heiman, San Francisco, for a three-story brick and concrete automobile school building, at Larkin and Sutter streets, to cost about $125,000.

Rumors from Corona, Calif., say that a pottery plant is to be erected there. Leo Kroonen, owner of nearly 1,000 acres of high grade clay deposits, has been working with J. Bonlon, of Oxnard, representing a syndicate of pottery men, for the sale of the property, it is thought.

One million common brick, and a large quantity of 4 to 10-inch hollow tile have been purchased by the Hanford Union High School District of Hanford, Calif., for construction of a new high school building.

Representatives of the Los Angeles Pressed Brick Company in Riverside, Calif., have announced the placing of an order by the United States government for 25,000 hollow tile for shipment from the Aberhill plant, in this country, to Honolulu. The material will be used in construction of a Federal building, work on which has been delayed for a number of years due to the war.

Several large building jobs are planned for San Francisco, among them a building for the Commercial Union Insurance Company. Work on the $400,000 Standard Oil building, on Mission street, between First and Second streets, is well under way. P. J. Walker is doing the construction. A $250,000 building, at First and Mission streets, to be known as the C. C. Moore building, has been started.

SUNSET.

SAVING STEAM FUEL.

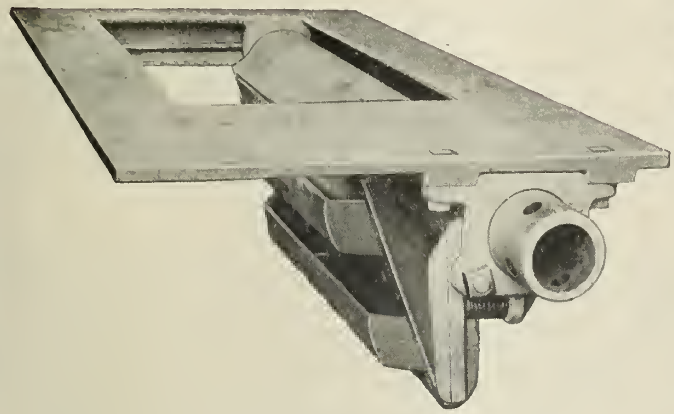
It is not only at the kiln that special efforts should be made in these days of high coal prices to effect every possible economy in fuel, but attention may well be directed also to saving fuel in the power plant.

Illustrative of the possibilities there was encountered during the past month an instance where, by some overhauling and readjustment, the fuel used in a power plant of a clay-working industry was reduced from eleven tons a day to eight tons, while at the same time power obtained had increased somewhat. This was accomplished without any great outlay for new equipment. It was simply a matter of improving the layout, stopping some leaks here and there, going over the entire equipment thoroughly and analytically with a competent steam plant engineer. The saving effected soon paid for the cost involved, and the instance graphically illustrated the possibilities of fuel saving at the power plant as well as at the kiln.

30% IN COAL
40% TIME
SAVED

on a

FACE BRICK KILN



The Furnace Gas Producer with Trunnion Dumped

By Means of the

Furnace Gas Producer

Try It On One Kiln

International Clay Machinery Co.

DAYTON, OHIO
N. Y. Office—136 Liberty St.

CINCINNATI BRICK AND BUILDING NEWS.

THE SUMMER is past and the coming of fall does not appear to offer very much promise of a big building boom in this section, notwithstanding the fact that the lack of houses, particularly residences and apartments, is so much in need. The outlook seems to be only fair, if that, and there is a hesitation on the part of the public to make any advances in this way. Not that there is no desire to build, for the number of prospective home builders is large, if one may judge from present indications. As an instance of this kind one architect has now on his books about a hundred prospective buildings, but the people will not go ahead under present conditions. This is but one instance, and if we take into consideration the fact that others are, no doubt, just as well supplied with prospective buildings, we may be able to get a fair idea of how the situation looks now.

But the people are not going to build so long as prices on commodities continue high, labor is scarce and uncertain, and the wages asked out of all reason. Then the matter of obtaining the materials when wanted does not help matters either. The car situation should soon improve and this will be a help in one direction. The cost of materials is likely to be lowered some before long, as there is a tendency now to lower prices on many lines, and the wage question is bound to follow as a logical after-effect. However, the question is: Will the public not wait until spring before making any more than an ordinary attempt to enter upon a building campaign to any extent? This seems to be the impression now, as there is little incentive to go ahead while the general situation is lacking in some of the vital helps.

According to the reports of the Building Commissioner here, the month of August was a slow one for the building industry. There were 1,171 permits issued for the month, with a total estimated cost of $648,995. This shows a considerable decrease as compared with that of a year ago, when the permits were 1,253, representing a cost of $1,208,485. For the first eight months of the present year the estimated cost of building improvements here amounted to $9,885,772, which was larger than that of a year ago, when the amount was only $6,346,160, so that the decrease has simply come in the past month or so. The likelihood of the city facing a rather serious shortage of homes is one that is giving the authorities some concern now.

Fred W. Baack is letting contracts for the building of a bungalow on Erie avenue, opposite Ault Park, in Hyde Park, East. It will be built for the market.

Zettel and Rapp, architects, are making plans for the construction of a new plant for the Ault and Wiborg Company, to be built on Dana avenue, west of Montgomery road, in Evanston. It will be of brick and concrete, five stories high, and will be 116 by 76 feet.

A brick duplex apartment is to be built by Mose and Isadore Wolf, in Burton Woods lane, near Clinton Springs. The plans were prepared by Oscar Schwartz, architect.

C. C. and E. A. Weber, architects, are preparing plans for a five-room bungalow for Dr. A. P. Walton, to be built on Riverside parkway, Briarcliff, Kentucky Highlands, Fort Thomas, Ky. It will be 33 by 38 feet.

Contracts are to be let by Roebling Bros., builders, for two brick residences, to be constructed at 717 and 721 Trenton avenue, Price Hill. Both will have garages, and will cost about $12,000. They are being built for the market.

The Ault and Wiborg Company is having plans prepared by Zettel and Rapp, architects, for a two-story building, 57 by 87 feet, to be built on the north side of New street, adjoining its plant. It will be used for an employes' restaurant.

Plans are being prepared by Rendigs, Panzer and Martin, architects, for the new plant of the Wheatley Pottery Company, which will be built on the triangular acreage lot on Lester road, in Pleasant Ridge, bounded by the Pennsylvania and C. L. & N. R. R. Company's tracks. The building will be one story, with 45,000 square feet of floor space. The exterior will be of ornamental type, of a special tile made by the company, to be used in connection with brick. It is expected that the plans will be completed some time in September.

The report heard at the office of the Cincinnati Clay Products & Manufacturing Company, is that the demand for all kinds of brick and other clay products has been slow of late. There is a better call for building materials, but the situation with regard to the brick demand is very much off. There is no brick being made at the plant.

The Brick Sales Company say that the demand for brick has been slow, and the indications do not look favorable for the remainder of the year. There is very little activity in the building trades here. Prices have been advanced on some lines on face brick.

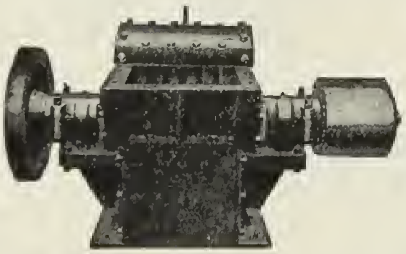
The Evans Builders Company find that the demand for clay products is very dull at this time. The transportation situation, which should soon improve, will doubtless be a help, but the prospects for the fall are not very flattering now.

There has been some demand with the Builders Material Company for face brick, but the orders are not very active, and the situation does not appear to look promising for the coming months. The inclination for the home builders is to go slow now.

The Purcell Brick Company says that up to within a short time the demand for brick and tile had been very satisfactory, but now there has been a decline that does not promise for much in the way of a demand. The number of old orders on hand will be enough to keep them busy for some time.

There is little new with the F. E. Grand Brick Company, the demand for brick being very slow and the future for the remainder of the year not offering anything of consequence.

CINCY.



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Dayton, Ohio, U. S. A.

EDITORIAL NOTES AND CLIPPINGS—Continued.

The New England Brick Co. is operating the yards at Cambridge, Mass., and Bemont, Mass., to full capacity. On the Cambridge yard they are installing a Chambers Brothers Co. dry pan for grinding up bats.

Work on the new office building of the Globe Brick Company, Newell, W. Va., will be completed late this month, company officials announced this week. The new office is of white brick and will house all offices of the company. It is one of the most modern and complete office buildings of any industrial plant in the Ohio Valley.

Theodore S. Darrah, for many years manager of the Salem China Company's plant at Salem, Ohio, has accepted the management of the Cartwright Brothers Pottery at East Liverpool. H. H. Knowles, head of the Knowles Pottery Company, recently incorporated, has gone to Los Angeles to inspect sites offered for a proposed pottery.

The Homer Knowles Pottery Company, of East Liverpool, Ohio, which is seeking a California plant, has had preliminary negotiations with the Chamber of Commerce, Long Beach, Cal., and expects a free site there for a factory. The plant plan is 526 x 286 ft. and the output of crockery would amount to from $800,000 to $1,000,000 a year.

S. L. Galpin, expert geologist, of Ames, Iowa, with W. S. Elton, general manager of the Iowa City Clay Products Company, during a tour of inspection to various clay deposits, in Muscatine county, found a tract of clay suitable in all ways to meet the requirements of a branch plant to be erected by the Iowa City Clay Products Company.

A porcelain plant will be operated at Leominster, Mass. The firm will be known as the Commonwealth Porcelain Company and will manufacture porcelain for the Beland Manufaucturing Co. The latter manufactures electrical fixtures at its plant in Worcester. The Commonwealth Porcelain Co. was organized by Geo. D. Spaulding and Lewis A. Jalbert of Leominster.

Many members of the Columbus Clay Club, Columbus, Ohio, are making an aggressive campaign for the brick and other clay products to be used by the Columbus Board of Education in its building program and have erected in front of the office of the building superintendent, 50 E. Town street, sample walls showing the variety of brick and the method of laying them.

After 12 years' association with the East Liverpool offices of the Roessler and Hasslacher Chemical Company, George Barlow has left the organization to take up his new duties as an officer in the newly organized Massillon, Ohio, China Company. Mr. Barlow has been succeeded in the East Liverpool office by Herbert O'Hara, who has been with the firm for a number of years as road salesman. He possesses a personal friendship with the pottery, glass and enamel trade, enjoyed by few.

The International Union of Bricklayers, Plasterers and Stonemasons plan to purchase and operate a brick yard in Cook County, Illinois. This will be decided at the convention to be held in Cleveland, October 11. Thos. R. Pierce, first vice-president of the union, states "the national shortage of brick has kept our men out of steady employment. Our plant will relieve this shortage considerably and afford men work." He also declares that they "will not stand for gouging the public, either." It is estimated that the union will spend from one to three million dollars in the purchase of a suitable plant.

Richland County, Ohio, will soon take rank as a shale county. Three companies are operating or preparing to operate their plants northeast of the city, near Olivesburg. The Mansfield Clay Products Company has been operating for several years, and has laid out a village adjacent to the plant. Contracts have been awarded for the construction of 30 new brick homes. The Richland Shale Brick Company has its machinery installed and will soon begin the manufacture of brick. This company has its own gas well and geologists believe oil will be found in this shale. This company also is making special preparations for its employes. The North American Brick Company is drilling for gas near its plant. The shale beds of this company are said to be inexhaustible, and an excellent quality of brick will be manufactured.

John W. Gates, formerly president and general manager of the Gates Refractories Ltd., Montreal, Que., has resigned to open an office at 348 South James street, Montreal, where he proposes to carry on business under the name of Gates Engineering Co. Ltd. The new company will specialize in boiler settings, special furnace brick work and general contracting for power furnace installation.

It takes a ton of coal to burn a thousand brick, and every advance in coal per ton adds the same amount to the cost of a thousand brick. This is one of the two reasons given by the Decatur, Ill., Brick Company for the last advance in the price of common brick to $20 and $22 per thousand. Now, their big reason is the general freight advance, which applies to the hauling of the shale to the shale deposit at Springfield to Decatur. The high grade face brick is now quoted at $32 a thousand, with a credit of $2 a thousand to anyone who will haul his own. The company contemplates returning again to the manufacture of hollow tile.

The Richland Shale Products Co., Columbia, S. C., has increased its capital stock from $75,000 to $100,000. The new plant of this company is located at Littleton, S. C., but the main office is maintained in Columbia. The president of the corporation is P. H. Haltiwanger, who is connected with the Carolina Life Insurance Co. A. T. Blatchford is general manager. The Richland Shale Products Co. will specialize on the highest class building materials, brick, hollow tile, etc., manufactured from shale. The shale deposit is unexcelled in quality. The plant has been constructed with a view to efficiency and economy in production and is equipped with the best and most modern machinery made for this purpose. Nine kilns with a monthly capacity of 200,000 hollow building tile are being constructed. Power will be furnished from the Parr Shoals Lines, which pass near the plant. The plant when in full operation will employ from forty to fifty men and their shipping zone will extend as far north as Baltimore, as far south as Tampa and as far west as Chattanooga.

Sewer pipe and brick manufacturing plants in Tuscarawas County, Ohio, expect a large increase in production soon. Production which has been curtailed 25 per cent. in the last year, is 40 per cent. less than during the war, when plants worked on war materials. Notwithstanding the reduced production few men have been laid off, not over 10 per cent. at any plant. Many factories have kept their maximum forces. The disturbing factor has been the car shortage, which in three districts of the county—Dover,Strasburg and the Millvale-Urichsville district—has scaled the allotment to 20 per cent. normal. The output not loaded on cars has been stored in yards awaiting relief from the Interstate Commerce Commission. There are orders enough on the books to keep the 20 larger plants in the county busy for two years. Twelve hundred men at present are working. The average wage is $5 a day. One operator said the 40 per cent. increase in freight rates is a two edged sword. He said it would release more cars, but would cause an increase in the cost of sewer pipe building and paving block. The advance that had been expected was not over 25 or 30 per cent. Two plants are idle because of repairs. The 100 men who had been employed there are securing work at other local plants. The idle plants are in the Urichsville territory.

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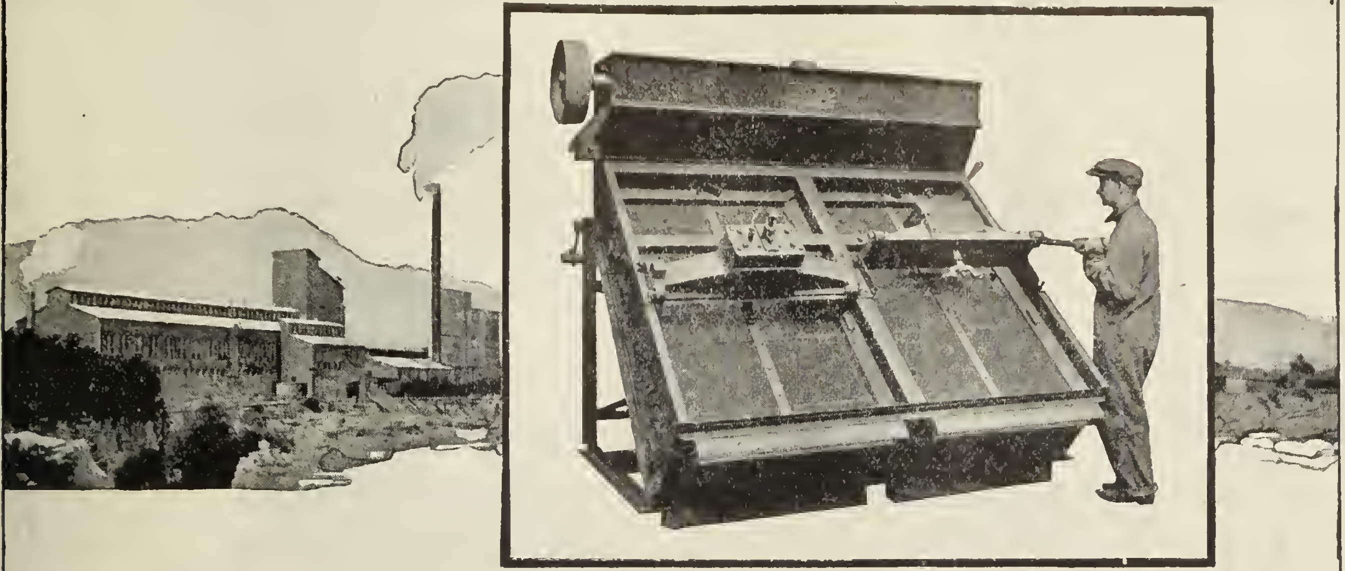

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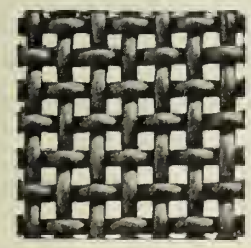

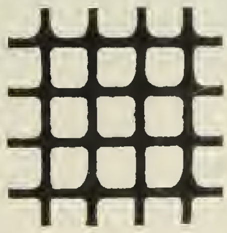

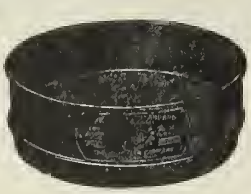

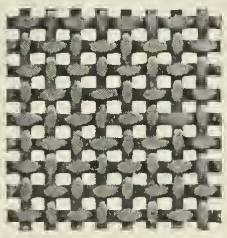

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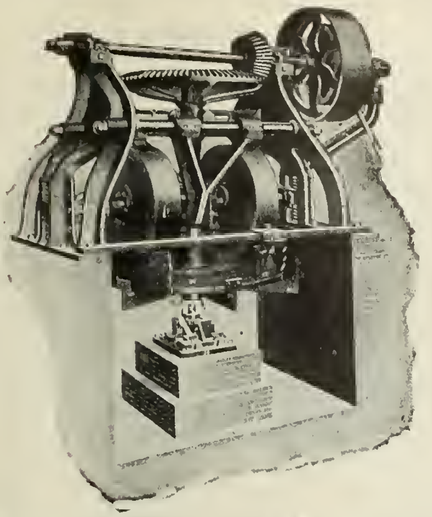

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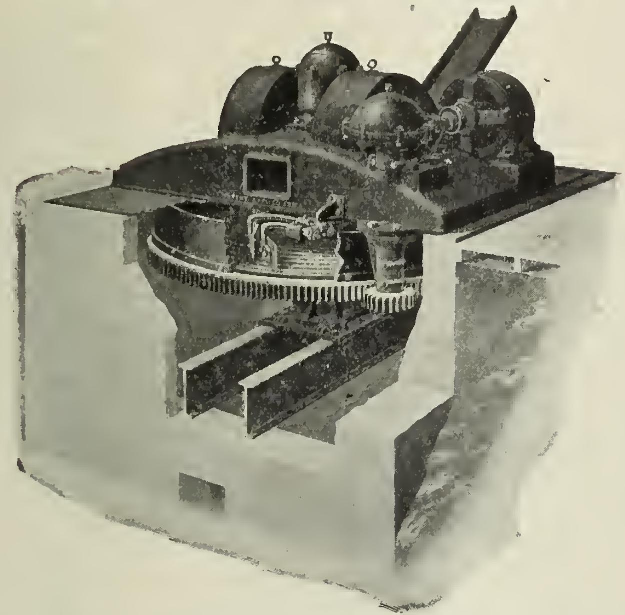
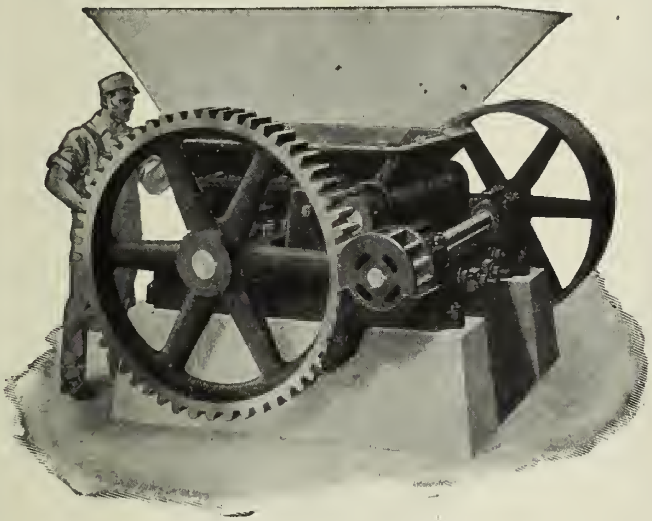
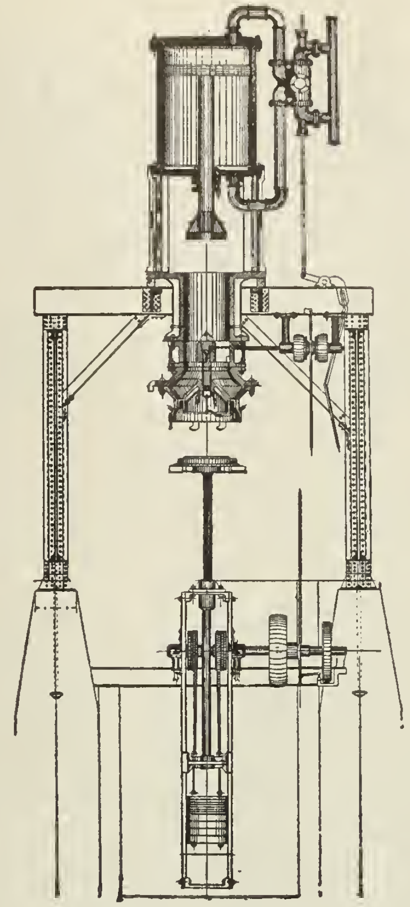


Model A-300 Step Bearing Type Dry and Semi Dry Grinding Pan



Single Roll Crusher



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Frank E. Jago, Resident Manager

32nd Street and Broadway

Written for THE CLAY-WORKER.

BRICK AND CLAY NEWS FROM MILWAUKEE AND WISCONSIN.

INCREASING COSTS of labor and building materials of all description are showing a more pronounced effect on the construction situation in Milwaukee and other Wisconsin cities. This is revealed in the decrease in building operations, which early in the year showed a remarkable gain over last year, but which have more recently begun to slump. The much hoped for easier building material market, which was expected in some quarters when prices of food and clothing showed inclination towards more normal prices, failed to materialize when new demands of labor had to be met and increased freight rates and operating expenses of manufacturers began to affect the material market.

Facts disclosed by the records of the building inspector's office at Milwaukee for August show an actual falling off in construction from the figures of the corresponding month in 1919. This year $1,183,827 was invested in building. Of this total, $163,155 represented alterations; $31,400 stores and stores with living apartments; $46,800 duplex flats; $395,550 single dwellings; $85,105 garages; $55,546 factories and shops; $9,500 office buildings, and $12,727 miscellaneous. Last year, in August, the total construction authorized reached the sum of $1,492,088 on 1,983 permits, while this year the number of permits fell slightly, to 1,940.

The situation at this time shows that more permits are being granted for alterations and repairs than for new buildings. It indicates that investors prefer to hold off another year until the hoped-for drop in building costs materializes. Those who have been forced to build are building only for themselves. Few are courageous enough to even provide an additional living apartment by building duplexes.

Manufacturers and sellers of brick and other clay products are meeting with difficulties, although the present supply of material is still inadequate to supply the demand. The labor situation now is not as acute as it was some time ago, but coal deliveries have been irregular and production has met with handicaps from this and other hindrances. The freight situation on deliveries of the finished product is another obstacle, although a slight improvement is reported from some sources.

A further change in the organization of the Kewaunee Clay Products Co., Kewaunee, Wis., is noted in the resignation of C. H. Schmiers as president of the corporation. Mr. Schmiers was one of the organizers of the company and was active in its development from the time of its incorporation. Through his energy the plant was put into operation and is doing a progressive business. He has accepted a position elsewhere with another clay products concern, and has left for the new field of his endeavor.

With a large number of contracts still to be completed, manufacturers and dealers in brick and other clay building materials are being kept busy. The construction being put under way at this time is also of no small consequence, while reports from the field indicate that architects are working on plans for many new and important structures, which plans will materialize within a short time. On the whole, the situation at present is generally satisfactory and the future outlook of the industry is bright.

A. BADGER.

Another argument to use in favor of the brick home is that it lessens the insurance cost.

There is no class of people in better shape to make improvements and build with brick than the farmers. They have had some wonderfully prosperous years and they should be encouraged to invest a part of their accrued wealth in permanent buildings.

Engng. Library

OCTOBER, 1920

THE CLAY-WORKER

THE POTTER'S ART:— The Market Place In Tirana, Albania.
See Page 319.

Published Monthly by
T. A. RANDALL & CO.
INDIANAPOLIS, IND.
OFFICIAL ORGAN OF THE N.B.M.A.

Published monthly. Subscription price, $2.00 per year. Entered as second class matter, January, 1884, at the post office at Indianapolis, under the act of March 3, 1879. Title registered and contents Copyrighted by T. A. Randall & Co., 1919.

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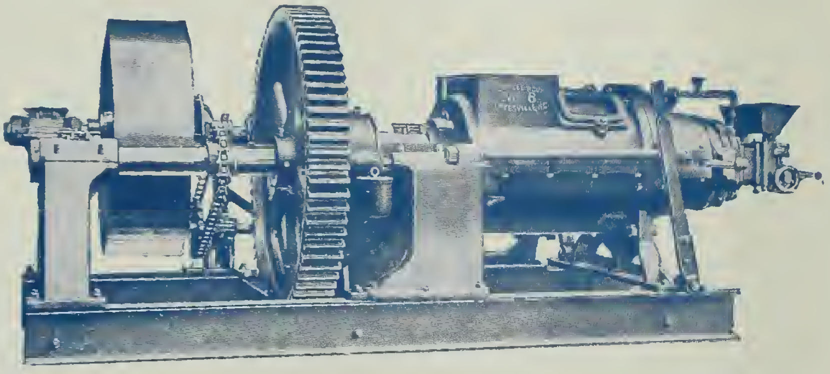
Direct Geared Machinery for Brick Plants

We do not claim to be the originators of the Single Geared Machine, the first brick machine ever built being of that type. We have, however, so proportioned the gears and pulleys as to get the best results. Some of the advantages are: Saving in Power, Quiet Operation, Greatly Reduced Repair Costs, Operation at High Speed without Damage. All very essential during these times. If weary of the vibration, hammering and breakage of an old compound-geared machine you will not regret having investigated the Steele Direct Geared Machines. We present cuts of a few machines below.



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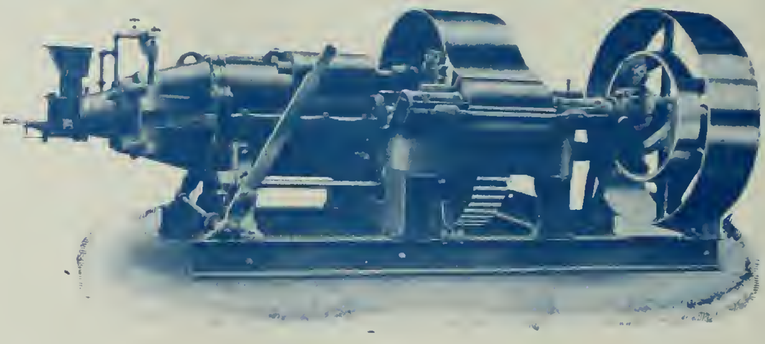
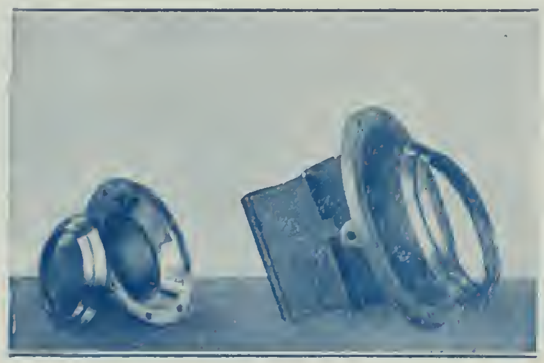
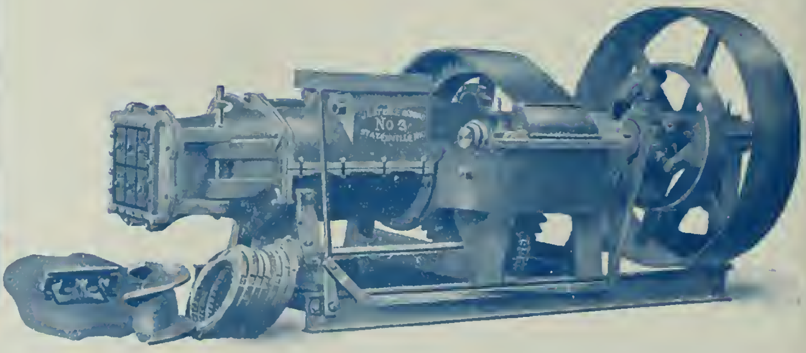




Oil Dies of Improved Type Side and End Cut.



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THE CLAY-WORKER

THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 74. INDIANAPOLIS, OCTOBER, 1920. No. 4

THE POTTERS ART IN THE BALKANS:

Omar Khayyam Could Still Find Inspiration Among Potters of Albania Where Today They Are Carrying on the Work in the Same Crude Fashion as did the Ancients in 500 B. C.

THE potter and his clay has furnished poets and philosophers with striking similes from the days of Omar Khayyam. His primitive implements and picturesque manner of working has had universal appeal to those who delight in finding analogies between the passing pursuits of the moment and the progress and destiny of the human race.

Pottery, in its highly specialized present day development in modern countries has lost much of its pristine fascination, considered from the standpoint of art, but in the Orient the occupation is still carried on in the selfsame way that prevailed when the Persian Poet wrote his famous quartrains.

Child Labor Laws Have No Meaning to Albanian Potters, the Apprentices Are Sometimes Less Than Seven Years Old

His skill has been inherited through generations of ancestors stretching back into the dim dawn of history. Archaeologists have given us proof that there is no substantial difference between the way the Albanian craftsman of the present day fashions his wares and that of his Assyrian and Babylonian predecessors 2,500 years ago. Time has wrought no change, hence no improvement

Beauty and utility are not always synonymous. Quaint is very frequently an euphemism for the grotesque, as many a collector of ceramics has proved by sad experience, but it is worthy of note that primitive peoples usually succeed in mating service with grace in moulding their rudimentary implements and utensils of daily use. Water jugs and jars and bowls of pottery which constitute the kitchen equipment of a housewife of the Near East possess lines of singular beauty, and are moreover, very often the forerunners of the modern "iceless refrigeration" idea. Made of porous composition, they keep the contents cool for hours by the process of evaporization.

American Red Cross workers who have carried the campaign for better health and higher standards of education and sanitation into the Balkans and Near East have found nothing that serves so satisfactorily as a substitute for ice as the earthenware water jugs which every native carries when on a journey. These are sometimes urn shaped, and sometimes in the form of ewers, but always of graceful lines and proportions. When duly dampened, these containers keep their contents cool a long time, by the principle of evaporization.

American Red Cross workers engaged in relief work in Albania have discovered potters working in shops more than a thousand years old. Each potter has his apprentice, often of such tender years as would horrify child labor opponents. It is no unusual thing to find a little tot not more than six years old, already beginning his life work in the shop of the local potter. It is to such as these that the boys and girls of America, through the Junior Red Cross, are seeking to minister.

POTTERY AND GLASS IN ENGLAND.

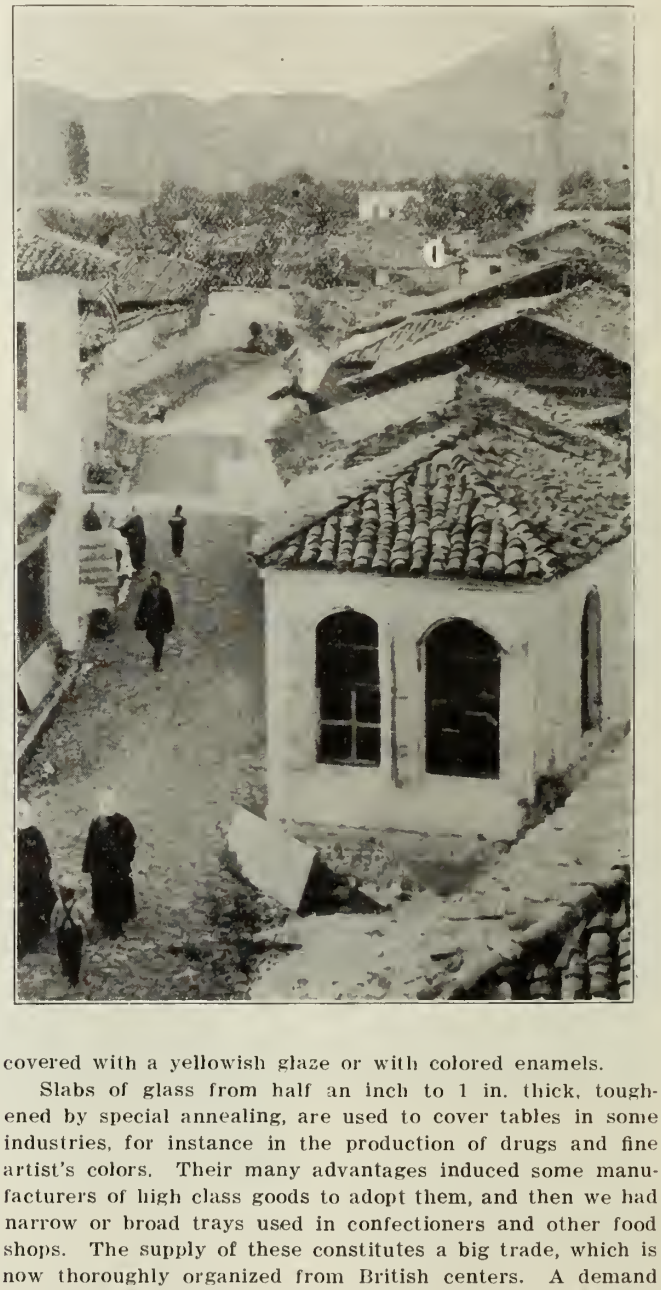
WITHIN the last twenty years or so there has been quite a revival of potteries in England producing artistic ware in districts not usually associated with the idea of earthenware or china production. Many of these wisely specialize, often producing single items or sets particularly suggestive of the locality, so that acceptable souvenirs are made available for visitors. We have seen good examples of vases, bowls and figures produced thus in Kent, Sussex, Devonshire and Yorkshire. Some of these are still with us, others have ceased to produce, but the Castleheadingham pottery, which turned out numerous charming replicas of Tudor and Jacobean drinking vessels, etc., found in the neighborhood, and the beautiful semi-translucent crackle Beleek ware, with its shell rock and seaweed ornaments. These are always interesting, both for the casual visitor and the more ambitious collector, and frequently prove effective introductions for the sale of other output of the potters. It is a movement that deserves to be encouraged, especially now that excellent figure pieces are being producd in this country, not only in semi-porcelain but in ordinary earthenware, in ivory and in polychrome enamels.

A Picturesque Albanian City

The city of Elbasan, Albania, in one of the rockiest and most barren parts of the country, cut off from all comunication with the outside world, except by mountain trails, traversed by pack mules and ox carts. Despite its inaccessibility, this picturesque Albanian city, with its red tiled roofs and slender minarets, is a rich reward for the venturous tourist.

Besides these there are several firms producing souvenir pieces for distribution through local dealers. These take an infinitely varied form. Among the most interesting groups are the architectural models, three of which are reproduced from the Goss collection. The centre piece represents the Norma Tower of the Priory Church, Christchurch, Hants, is 5 in. high and gives a faithful reproduction of the architectural details. To the right is the ancient font in St. Tudno's Church, Llandudno, and to the left a cup, 5¼ in. high, designed from one of the charming columns in Melrose Abbey. There are many other fonts represented in the collection, including those of St. Ives, Hereford Cathedral, Warwick, Southwell and Llanwith-Major; there are also the towers of Largs and Blackgang, besides some of the most celebrated market crosses and an important group of models of famous houses. All these naturally have extensive sales as ornamental mementoes. There are others, however—and perhaps these deserve particular praise—which are put to usful purpose, as we see in tower vases, lighthouses, model night lights, cups, candlesticks, etc. There appears to be an endless demand for new models.

A little different from these are the panels with pictures, architectural or otherwise, modelled in medium relief either covered with a yellowish glaze or with colored enamels.



Slabs of glass from half an inch to 1 in. thick, toughened by special annealing, are used to cover tables in some industries, for instance in the production of drugs and fine artist's colors. Their many advantages induced some manufacturers of high class goods to adopt them, and then we had narrow or broad trays used in confectioners and other food shops. The supply of these constitutes a big trade, which is now thoroughly organized from British centers. A demand for these table tops also arises in the makers of surgical appliances, as they are wanted in surgeries, in the better equipped hospitals for ward use and in bacteriological laboratories. But that does not end the tale. The glass slabs are found in households for pastry and confectionery boards. Of late too they have been used for tops of desks in offices, for toilet tables and wash stands, and now they are being very largely used as tops for rush and wickerwork tables. In these cases they are clipped on by means of dainty lacquared brass or nickelled clamps. They are made in rectangular, oval and round shapes with straight and bevelled edges. They look well and are most sanitary, being easily washed.

BRICK LAYING AND CONTRACTING.

Two reasons for the more rapid progress of brick and hollow tile in building operations are the training of additional brick layers and the interesting of the brick-laying fraternity in the subject of estimating and contracting entire structures and not merely the brick work. Because wood was a pioneer building material most of the general contractors of the country have been developed through the wood working industry, and as a result many of the brick structures of the day are estimated and contracted for by people primarily trained in figuring on and handling lumber. Their figuring helps some in brick work, but logically the bricklaying fraternity itself should take a keener interest in the subject of general contracting. Moreover, there is enough benefits likely to accrue to the clayworking industry itself for the members of this industry to manifest a lively interest in the subject of how to develop general contractors among the brick layers as well as increasing the army of brick layers. It is not enough for the clayworking industry of this country to produce the best building material on earth, but to encourage its wider use we should also seek to encourage a more general study of estimating and contracting among those who are primarily interested in laying up brick and tile.

BUTTON HOLE TALKS.

When I first saw him, I took him for a disinterested spectator looking at quite an elaborate building on which we were at work. Later on I found that he was the owner of the building. He was most unassuming. Exceptionally quiet if let alone, however, if properly interested, he had a wonderful way of summing things up. Some one had suggested to him the doing of something that, while it might slip through in the ordinary business dealings, did not line up with his own code of ethics, and he told this story:

"Back in the old days, there were three of us little boys with our widowed mother and we were in what you might properly and truthfully call reduced circumstances. Reduced indeed about to the limit of reduction. We all worked and w worked hard. At night we were tired and hungry. Not a languid tiredness nor a fickle hunger, but a weary, deadly tiredness and a vigorous, boisterous, ravenous hunger, a hunger that made dry bread delicious. My mother was Irish, vigorous, honest in the extreme, and full of that old fashioned idea that it was her duty to make good, honest, industrious citizens of us, her sons. We had little chance of schooling but, after a frugal but filling meal at night, and when we were ready for that one other thing besides eating that a growing boy wants—sleep—she would line us up at a little table by the lamp and have us commit to memory our daily ration of literature. When this was satisfactorily accomplished, we could hit the bed. Whether we went early or late was strictly up to us, we went only when the task was completed. Mother was very determined and her decision was without appeal.

"At Easter time she was wont to prepare hard boiled eggs for us, stained with coffee and calico, and with these we fared forth to adventure with neighboring boys and, tapping our eggs against theirs, bet them on results. I conceived a very brilliant idea, got myself a china egg, colored it up and bankrupted all the boys on the street. So far it seemed a brilliant success but my brother, observing and coveting the spoils, insisted on a division to which I would in no wise yield. It was clearly my own idea and my own individual property. He laid his case before mother. She at once held court, heard all the evidence, called in the china egg, broke it into a thousand pieces and then made me go out and return all the winnings to the boys from whom I had gotten them, and I have never used a china egg since in secret, in public, in society or in business nor shall I do so."

Beginning as a newsboy at ten with the doing of the little things well, he has grown constantly until now he handles magnificent interests, widely scattered. He is respected and esteemed among men.—Common Clay.

Balkan Iceless Refrigerators

Earthenware water jugs are used by the housewives of Sezzi, who are direct descendants of the famous "Sabine women" who lured the sons of Numa in the brave days of old. In design, these vessels are very similar to the still more ancient Etruscan vases. They are graceful in line and serve the place of the modern Iceless refrigerators, keeping the contents cool by evaporation.

A NATIONAL BUILDING AND CONSTRUCTION CONGRESS.

A DEFINITE move to stimulate building and construction—a step of utmost importance to manufacturers of brick and tile throughout the entire nation—was taken Sept. 28, with the formation of a National Building and Construction Congress at a conference of 36 delegates representing every phase of the industry in the Hotel La Salle.

A gigantic meeting to include representatives of all of the branches of the industry with a strong showing by building material interests, was set for June 1st, 1921, tentatively, subject to change if conditions warrant quicker action.

Meanwhile an executive committee was formed, endowed with a fund of $3,000, and pledged to a tremendous effort to find out what is the matter with the industry, remedy its defects, stimulate building by propaganda and prepare a program for the congress next year.

A clash between the contractor employers, represented by Gen. R. C. Marshall of the Associated General Contractors in Washington and the labor forces, represented by John H. Donlin, head of the Building Trade Department of the American Federation of Labor, and two officials of the Bricklayers, Masons and Plasterers International Union of Indianapolis, Ind., Thos. R. Preece and Wm. J. Bohn, threatened to disrupt the conference.

A few days before the meeting opened, Donlin sent a letter to E. M. Craig, manager of the Building Construction Employers' Association of Chicago, stating that if the employers wanted harmony in the conference and congress they could best show it by stopping the "open shop" campaign now afoot.

Gen. Marshall was one of the first speakers. He directed his talk to answering this letter addressing Donlin, Preece and Bohn who were present. He said:

"Gentlemen, in the consideration of the building industry I think perhaps it would be well for us to first look at the volume of it and then attempt to look at some of the component parts. According to Dodge's reports the contracts let up to Sept. 1st for the year 1920 in the northeast quarter of the United States, which comprises some twenty-five states, was $2,000,000,000. That does not take in consideration the rest of this country. Four more months left in the year so that if you figure this arithmetically, it appears certain that the building industry for this year is no less than a four billion dollar proposition.

"There are few people who look upon the building industry as an industry. It is looked upon entirely as in its component parts. The two parts that are perhaps most prominently before the public eye are labor and material.

"Mr. Donlin, who is the president of the Building Trades Division of the American Federation of Labor, has as usual, very generously placed upon somebody else the honor of being a student of conditions in this country. Mr. Donlin has repeatedly, during this year, shown his large conception of the duties in the building industry. No longer ago than yesterday in the Chicago Tribune is the quotation and comment upon a letter on the subject of "Jurisdictional Rows." He puts the subject most aptly. I believe he is right almost all the way through. However, Mr. Donlin is just as human as I am. Part of the time, why, I believe he is wrong. Unless organized labor will maintain a reasonable attitude toward the other elements of construction which have a common interest with it, those other common interests will go to the other extreme. First one and then the other starts the pendulum to swinging and the pendulum swings almost as far in one direction as from the point it started in the other direction. And it is this pulling first from one side, then to the other, that has produced a chaotic condition that exists today.

"Insistence on a labor monopoly or an employer monopoly of the conditions of labor under the non-union shop, the closed shop or any other name, is bound to bring reaction after reaction, according as circumstances give the power to one or the other.

"In the building trades, labor is largely organized and should be ready to deal with employers. By many, it is considered that their right to do so is fundamental. Also, the rights of the employers to contract with whom they please is equally as fundamental. It is necessary that these forces work together for the good of the industry. Cooperation is the watch-word of this Congress, as I understand it.

"These different elements are now working together for the good of the industry in the National Board for Jurisdictional Awards, which has not had the publicity and which has not the knowledge among building people generally, I mean by that, that building people generally are not sufficiently cognizant of what it does and of the good that it can do in the building industry generally.

"It has been said that from 80 to 90% of strikes on buildings have been due to jurisdictional matters. I do not know whether that is correct or not, and Mr. Donlin's strong stand behind this Board of Jurisdictional Awards is something for the rest of us to emulate.

"If the trade unions of the building industry perform the services for their members and the corresponding crafts which they are in a position to perform, I believe that they need not fear to recognize right or freedom of contract for the individual, and if they will recognize that right, the construction employers of the country will, I believe, not only recognize but also come to adopt collective bargaining through the unions as a more satisfactory means of handling labor questions because of the very nature of the industry and because of the fact that the building trades are organized.

"If labor will not recognize that right and if they insist on accompanying the recognition of collective bargaining with the abrogation of the right of free contract it has only one result possible, endless warfare, and that is the thing that this Congress is brought together to stop. I am simply taking that as one example.

"The question we have before us, I believe can be stated in three questions: Is there need of a body such as a building and construction congress? Second, if so, what is that need? Third, what are we going to do about it?

"Frankly, I think there is a need of a common point of contact between the various elements of the industry. That need can be met and perhaps best met, by a Congress. The principal need other than that, just expresses in my opinion, the determination of policies and the execution of principles on a uniform basis created by the combined elements of industry rather than as at present, on a large number basis set up by the various elements acting independently and sometimes antagonistically. Now, should we all determine that a Congress is advisable, I suggest that we proceed to the formation of such a Congress."

Donlin spoke in reply for union labor. But he made no reference to Gen. Marshall's remarks and seemed to desire to keep harmony in the ranks of the conference. He said:

"The trouble with all of us is that we are not organized. We need a building congress with teeth in it. We need an organization so powerful that if labor is stopping building and construction, the congress can call in labor and demand an accounting. We need one big unit.

"I read the other day where Daniel Willard, the railroad man, said that coal to Europe was getting priority over building material shipments. If we were organized we could stop this thing and get priorities ourselves. We could get legislation or anything else we want."

Col. J. R. Wiggins, builder, of Philadelphia, disagreed with this view. He declared it was impossible to get the several branch organizations to forget their differences to the degree Donlin hoped but said the congress could do much to smooth these differences out.

"As a matter of fact we are responsible for the increase in costs. We have all boosted prices until it costs 150 per cent more to build.

"As a result, bankers are afraid to invest for fear the ultimate shrinkage in value will leave their loans uncovered and unprotected. We must reduce building costs to a point that will reassure the bankers."

A committee of ten was appointed to consider the manner of organization of the congress. It decided on a "steering committee" of six men who would form an executive committee of twenty to work for harmony in the industry and more construction. The six are:

Thos. R. Preece, Indianapolis—Labor.
Robert D. Kohn, New York City—Architects.
Gen. R C. Marshall, Washington—Contractors.
Louis K. Comstock, New York City—Sub-contractors.
Wharton Clay, Chicago—Material Men.
Morris Knowles, Pittsburgh—Engineers.

"This committee will form an executive committee of twenty that will include representatives of every branch of the industry," said Chairman Comstock. "We will investigate building conditions in every locality of the country, stimulate building by publicity and find out what is the trouble with the industry. We can cure its evils."

INAUGURATES BUILDING CONSTRUCTION CAMPAIGN.

The matter of building construction in Cincinnati is being given some very favorable consideration. There has been organized a Publicity Committee of the Hamilton County League of Building Associations, and a campaign is to be started to increase the interest in home building in this section. It is believed that the conditions here are not as bad as in some other sections. Judge Meredith W. Yeatman has been made chairman of the above committee, and in commenting on the subject he said:

"The plan of financing the building associations of Cincinnati is acknowledged by the business and manufacturing interests as a happy thought. We have 227 building associations, with their corps of trained officers, who for many years have been dealing with the housing problem and encouraging people to own and build homes.

"Builders tell us that four out of five of the houses that they build themselves have been financed through building associations. Cincinnati does not even have to worry, as in other cities, about taking care of the differences between the purchasers' cash payment and the amount of the loan which he is able to obtain. This feature of the home financing is eliminated in Cincinnati through the fact that the building associations are making more liberal loans than is customary in other cities, and the builders themselves will take second mortgages when the purchaser is handicapped in the amount of his cash payment.

"Even in the sale of houses already built it has become the custom for the party making such sale to accept a part of his payment in the shape of a second mortgage. The building associations, the builders and the would-be home owners in Cincinnati are all ready, willing and anxious to function and will do this.

We have started our campaign to raise not less than $25,000 from the business interest of Cincinnati to conduct an educational advertising campaign to show the people how important it is that their savings should go into the building associations at this time."

The work of this organization is very likely to have some good effect on the situation, and the interest shown in this plan is such as to make some notable progress toward improving the conditions here.

Written for The Clay-Worker.

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.

ALTHOUGH construction activity in Milwaukee at this time is below that of the corresponding period last year, it is worthy of note that building operations during the last two months show an improvement over the slump experienced during the months prior to August. Another feature of the situation is that the total amount of building authorized during the first nine months of 1920 is in excess of the same period last year by nearly $3,000,000. The amount of construction authorized thus far this year for building of various types is $16,110,671 while the figures for the corresponding period last year were $13,361,241. During September there were issued 2,076 permits calling for expenditures of $1,920,874, while in the same month in 1919 the total was $2,459,983.

Buildings which have been authorized during the last few months have been largely of the type requiring principally brick and other clay building materials. Frame dwellings and similar construction have been neglected to a great extent. Since January 1 only 487 dwellings have been erected in the city of Milwaukee. These dwellings have furnished homes for 606 families. In 1909, when building was far below normal, 1,138 houses were erected, providing 1,922 apartments. These figures do not take into consideration the suburbs where the principal building activity is confined to residence construction.

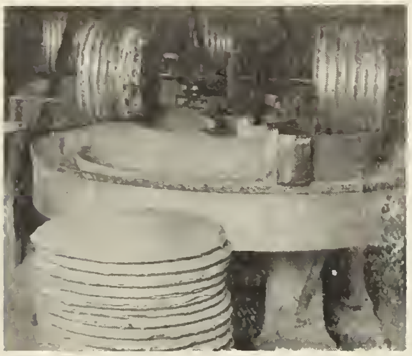
Reduction in price on some building materials is expected to result in greater building activities. This will naturally increase the use of clay products and dealers as well as manufacturers express optimistic views as to the future of the industry.

The United States Gypsum Co., an Illinois corporation, has filed articles in Wisconsin where it will use $250,000 of its capital stock. The concern will be represented by Chauncey Blake, Madison, Wis.

The clay industry of Wisconsin has been apprised of the demise of Elmer Leach, well known business man of Oshkosh, Wis., who died suddenly while at work. Mr. Leach was 59 years old and was descended from one of the pioneer Wisconsin families. From early youth he was identified with the manufacture of logging tools. He was also president and head of the Leach Clay Products Co., operating a prosperous plant at Manitowoc, Wis. Last year Mr. Leach purchased the interests of his partner in the Manitowoc Clay Products Co., and conducted the business under the management of his son. Plans made this spring, and which are now being carried out, include the erection of large kilns and the enlargement of the already extensive clay manufacturing business in Manitowoc. Mr. Leach was a prominent Mason, a Knight Templar and member of the Wisconsin Consistory, also a Noble of Tripoli Temple, Mystic Shriners. He is survived by his wife and two sons, E. C. and Elmer, Jr.

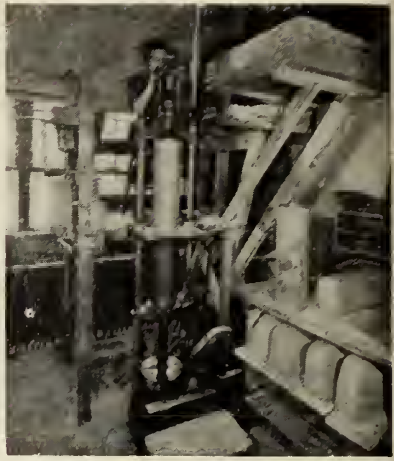
John F. Wadewitz, pioneer resident and manufacturer of Racine, Wis., died at his home in that city after two months' illness. Mr. Wadewitz was a native of Germany, coming to this country when 20 years of age. In the 50's he engaged in the brick manufacturing business first with Hilker Bros. Brick Co., having kilns at Racine and Port Washington, and later operated three large brick kilns of his own. He continued in the clay products business until 1888 when he disposed of his interests and devoted his time to other business. A son and one daughter survive him. A. BADGER.

MANUFACTURE OF SPARK PLUGS



The Clay is Kneaded to Remove All Air Bubbles to Insure Non-porous Porcelains.

An Interesting Story of How This Very Important Burned Clay Product Is Made and Prepared For Use In Motor Cars.



The Clay is Carefully Prepared Before It Is Taken to Pressing Rooms.

THERE has for some time been an item of electrical supplies in our pottery product reports. Also we know that it has been a growing item and has practically doubled in quantity and value during the past five years. The last figures available indicate that the annual production of porcelain electrical supplies now totals ten million dollars or more. It is progressing now at such a rate that it is almost impossible to keep up with the total quantity or all the new uses.

For example, there comes to hand an interesting story in The Buick Bulletin about the making of spark plugs for motor cars that is a graphic reminder of rapid progress made in one small item of pottery which has now grown to a considerable aggregate.

We usually associate the term electrical supplies with light sockets, rosettes and those items used for wiring and lighting purposes. Here, however, we have a special item bearing some relationship to the porcelain electric light socket except that it serves a more strenuous and exacting purpose. It is a part of the makeup of what is considered the most important part of the gasoline motor, the spark plug.

The great problem with internal combustion engines was, in the earlier days, to develop processes for exploding the gas in the cylinder. Electric ignition has served its purpose, and it is to carry out this purpose that spark plugs were invented and are manufactured today in enormous quantities. Involved in the makeup of these spark plugs is a little cylinder of burnt clay the making of which is described and illustrated in a special article in a recent issue of the Buick Bulletin.

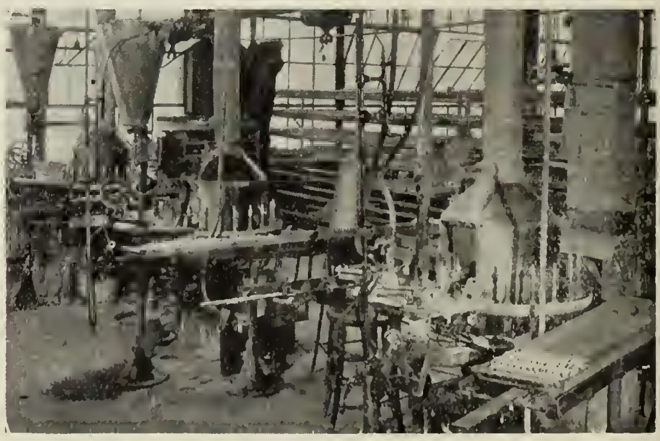
The process described is that of the Champion Ignition Co., with a plant adjoining the Buick factory, at Flint, Mich.

The process of making the porcelain part and of developing and fitting up the spark plug is described in detail as follows:

Eleven varieties of refined clay, mined entirely in this country, are used in the mixture forming the AC porcelains. The correct proportions of these different substances are placed in large vats where they are mixed with water. After many hours of incessant churning and mixing, the resultant mud is drained off, passing through fine sieves and under strong electric magnets which remove traces of impurities that might still exist in the clays. The purified mud flows down into huge cisterns where it is stored ready for use at any time. When a supply is needed, electrical pumps force the slip clay up into filter presses. Here under tremendous pressure the clay loses most of the water contained in the mixture and the remaining sediment is ready for additional mixing or kneading.

The sediment is removed from the presses and placed on powerful kneading machines which eliminate bubbles of air that might cause imperfections in the porcelain later on. One set of rollers presses the clay out in a thin circular band and then another set immediately compresses it into an upright ring. When the clay has been properly kneaded, it passes to the trimming boards where it is cut into large pieces, the outer edges of which are trimmed off as another safeguard against air bubbles.

The Soft But Firm Clay is Lathed Down to the Form Seen in the Finished Porcelain.



After the Clay Has Been Shaped, the Forms are Glazed to Give the Proper Finish to the Plugs.

These pieces are placed in a pressing machine to be given a cylindrical form and then they are ready for the throwing machine, where the clay is first shaped into small cylinders that indicate the purpose for which they are intended.

The throwing machine forces the clay through a small cylinder slightly larger in size than the diameter of a spark plug and the machine cuts off the clay at just the proper length to insure easy handling and yet not waste material.

The clay cylinders are then inspected for any imperfections that might have resulted and after they have been approved, they pass to large revolving ovens. Here the cylinders are baked to sufficient hardness to protect the shape in handling.

Coming out of the ovens, they are first pointed, in preparation for being turned into shape, and then move on to the turning lathes, where the soft, yet firm, clay is cut down to the form seen in the finished porcelains of Buick spark plugs. At the same time. the upper end of the insulator is threaded to take the center wire later on.

After the clay has been shaped, the forms are again sent to an oven where more moisture is driven out and the forms are prepared for further completion. When they are dry, they are carefully inspected for diameter and size, aid holes and cracks, and the threads inside are tested.

The Forms are Placed in Saggers Which are Packed in Large Kilns Where They are Burned.

When the clay form is known to be perfect, it is ready for the final stages of manufacture that produce the finished porcelain. The form is glazed with a ceramic preparation that gives the glossy finish of the completed porcelain.

And, now, the clay forms are prepared for the final baking ovens. They are packed in saggers, or crude clay frames, and the saggers are placed in the kilns, where a high temperature bakes and firmly sets the porcelains. After the porcelains have endured this heat for the correct length of time, they are permitted to cool and then they are again inspected for blisters, over and under size or any defects that might possibly have occurred during the intense heat treatment.

While AC porcelains have been passing through these stages of development and inspection, the electrode and shell assemblies have also been in the course of manufacture at the AC plant.

The center wire, or wire that carries the current from the connection on top of the spark plug to the point, is cut off in proper lengths and welded by a remarkable little machine to the head that screws into the porcelain, the threads for which were made when the porcelain was turned down to shape.

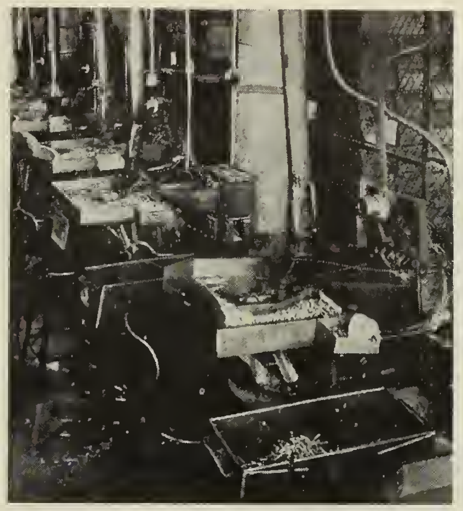
The threads are then cemented and the center wire is scrwed into place in the porcelain. The porcelain is again baked so that the cement acts equally as hard as the porcelain. This method makes certain that the center wire will always be in its proper position, solid and firm.

After the porcelain is baked this time, it goes to the assembly benches in the shell department, where the steel member that screws into the cylinder is manufactured.

And, here one notices the precautions taken to insure a leak proof spark plug, that not only keeps the current from leaking but also prevents a compression leakage. An asbestos gasket enclosed in a thin shell of copper is placed at the lower shoulder of the porcelain flange.

This not only prevents leaking but acts as a cushion and relieves the strain on the porcelain. At the upper shoulder there is a copper ring making a tight joint and preventing the steel coming in contact with the porcelain.

The blank shells are turned out of hexagon cold rolled steel by automatic machinery. Before they are threaded to fit the openings in the cylinders, they are inspected for exact size. Then the edges are polished, the threads made, and the small wire that forms one of the sparking points is electrically welded in place. It was formerly the custom to drill a small hole in the shell for this wire, which is now welded to the shell, making it virtually a part of the shell.



A Battery of Machines that Weld the Center Wire Assembly Together.

To protect the spark plug against weather changes, the shell is heat and oil treated after which it is inspected for battered threads; rough surfaces and imperfect welds. When it passes the inspection, it can be considered a finished shell and the only steps remaining are the assembly of the porcelain, electrodes and shell. All three units are conveyed to the same assembly benches, along which they pass, being finished and inspected.

A powerful pressing machine centers the porcelain accurately and sets the leak-proof gaskets solidly in place around the shoulder of the porcelain and another machine takes the assembled unit and welds the shoulder around the porcelain.

At this time, the spark plug is tested to see that it is electrically perfect and that no part of the plug is short circuited. It is placed in a small machine which tests the porcelain under a high tension current of 45,000 volts under which any imperfection would be immediately shown.

Then the two electrodes are cut to the proper length, their ends rounded off and polished as a means to prevent any possibilities of pre-ignition and the wire welded to the shell is bent over so that the exact width for the spark gap is established.

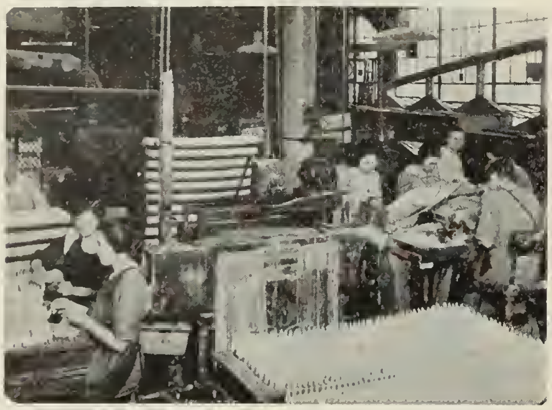
Up to this stage, the spark plug has been inspected each time it passes to the next step in its manufacture, and so it is now tested for compression leakage. It is placed in a machine that forces air around the plug under 120-pound pressure, and, if faulty, small bubbles form above the upper shoulder. Plugs that pass the series of tests and inspections are considered as perfect as automatic machinery, human skill and care can make them.

At the end of the assembly benches, the plugs are oiled and wiped before being sent to the final inspection room, where they are again examined carefully. The plugs are now ready for installation in Buick cars.

STANDARDIZING DOOR AND WINDOW OPENINGS.

At the first glance it may not seem that the clay working industry has any particular interest in the standardization of door and window openings in buildings. As a matter of fact, however, there should be a keen interest here, and there is a movement to this effect which merits active attention and such action as will result in some general standardization, both of opening sizes and of the frames which inclose them.

The lumber people, at a conference held in Chicago recently, established a set of uniform sizes for dressed lumber and shapes for moldings which have been formally accepted by the producers and dealers in lumber, by planing mill men and architects, and which will admittedly do much to simplify building operations and the manufacture and preparation of lumber in advance of its needs for this purpose.



The Center Wire is Cemented and Baked into the Porcelain.

The next logical step, and one which is already being fostered by the Hollow Building Tile Association, and by members of the brick fraternity, is to set up some universal standards in the sizes of the openings in walls of windows and doors and the details of their inclosure both as to brick and tile work and frames and casing. This is a work which calls for co-operative action between the different branches of the clay working industry making structural material, the sash and door manufacturers and the planing mills turning out windows, doors, frames and casing, and the architects who draw plans and specifications for buildings and building details.

It was the Engineering Bureau of the National Lumber Manufacturers' Association which worked out the details of this forward step in standardizing lumber sizes and molding shapes. Now the time is here for somebody to take the lead for similar action in the matter of standardizing openings for doors and windows.

It is claimed that people are building more new garages than they are new houses, from which it would seem that housing the machine is one of the contributory causes to a shortage in the housing of people.

CINCINNATI BRICK AND BUILDING NEWS.

THERE is not a very promising outlook here in building circles for the remainder of the year. It has been none too good these past few months, so that the coming of the cold months cannot offer very much in the way of help. However, the spirit is still there and the determination to make the most of the situation, unfavorable as it is, has been noted. There is no help for a condition such as the clay men have had to face in the past few months, and the view for the coming months does not look promising. However, it is good to see the attitude of the men identified with the trade, and there is but one thing to look forward to now, and that is the coming of another year with the hope that there will be a brighter side.

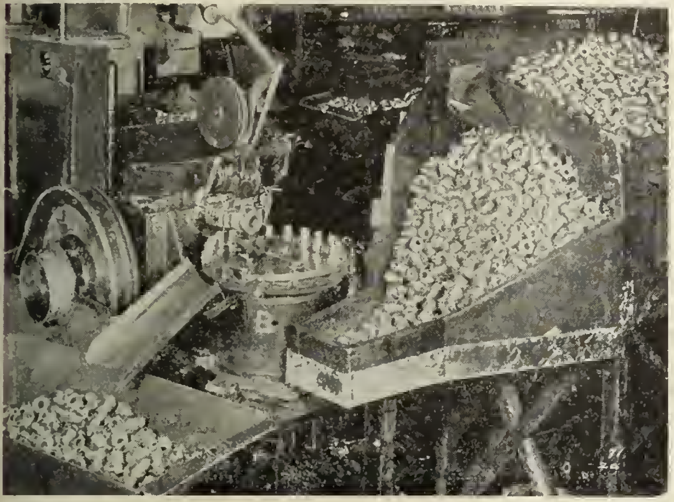
Aside from factory and kindred construction here the building world has been dull. There has been some apartment and residential work, but the number of such structures is not many. The impression seems to cling to many that prices on both materials and labor must be lower, and doubtless this has been stimulated by the fact that many other commodities and some instances of labor are showing a decline. This is bound to have its effect on the public mind, and whatever arguments might be brought forward to combat it, seem to be of little avail now. The larger number of those who have plans under way, or who might be contemplating a home or other kind of building, are going to delay matters, at least for a time.

The View Shows the Machine that Tests the Mechanical Perfection of the Plug.

There has been a very fair demand for building brick in this market, but this has been due to the building of industrial structures, and does not help the face brick man at all. There has been a very fair call for sewer pipe, but the general demand for clay products has been slow, and this is not surprising to the trade, because there has not been very much anticipated, so the disappointment has not been great. It is said that there has been some decline in the prices of building materials, and while these are not as yet noticed by the purchaser, the fact that there has been a reduction is a good indication. The stocks in the hands of material men are not likely to be lowered, because of the fact that they were purchased when high prices prevailed and the idea of taking a loss now does not appeal to them.

Efforts are still being made to encourage home building, one of these being the setting aside of a fund of $500,000 for loans to home builders by the Union Savings Bank and Trust Co,. with the hope that it will be found an incentive to go ahead with work of this character. The plan is to encourage the owners of property to build homes for their own use. No loans will be made for speculative builders. The loans are to be made on a six percent basis, which is lower than the present rate.

One of the peculiar things in connection with construction work here during the month of September is the fact that the number of garages builded here exceeded any other character of building. During the month permits were issued for the building of 123 garages, having an aggregate value of $71,315. There were only eight permits issued for brick residences, valued at about $73,000, the other permits issued being for other kinds of construction and a number of alterations. The month did not make a very notable showing.



Showing Manner of Preparing the Shells. The Machine Welds the Electrode to the Steel..

This Pressing Machine Centers the Porcelain in the Shell and Sets the Leak Proof Gaskets.

George W. McCammon, 63 years of age, and a member of the firm of the L. H. McCammon & Bros. Co., manufacturers of sewer pipe, died some days ago, at his residence, 124 West Seventy-first street, Carthage. He was a member of the Chamber of Commerce and the Building Material Association. He was also a Mason. He is survived by a son and daughter. The funeral services were conducted from the home, and burial was in Spring Grove Cemetery. His will was probated wherein his estate, valued at $75,000, was left to his brother, Walter S. McCammon, in trust, he to pay the income in equal shares to G. W. McCammon's daughter, Lida M. McCammon, and son, Donald E. McCammon, until they reach the age of forty years, when each is to receive the principal of his or her share. Walter S. McCammon, who is also named as executor, is given the right to take over the interest of his brother in their business, at its book value.

McGarvey & Co., brick contractors, who are located in the Gerke Building, have leased the property at 1434-1438 Main street, with the privilege of purchase at $15,000. The offices of the company will be moved to the new location.

The Strobl Tile Co., 4316 Durham avenue, Winton Place, was damaged by fire to the extent of about $4,000 some days ago. The blaze was in a shed behind the main building, and was caused by an overheated furnace.

The construction of a new temple of Cincinnati Lodge No. 5, B. P. O. E., will be started before very long. The new home will be located at the northeast corner of Ninth and Elm streets and run north to and include the present building occupied by the order. The plans are in the hands of Harry Hake, architect. It will be one of the largest and best equipped Elk temples in the country.

Samuel Hannaford & Sons, architects, have been commissioned to prepare plans for the building of a store and office building at the northeast corner of Fourth and Walnut streets, 75 by 200 feet. The building at the corner will be one story, and it is probable that the remaining portion will be three stories high. The exterior will be of ornamental type, and it is planned to have it completed by October, 1921.

The directors of the United Theatres Co., in New York City, have awarded the contract for the office building to be erected in front of Keith's Theater on Walnut street, at a cost of $1,000,000, to the Ohio Building Construction Co., of this city. It will be a twelve-story office building, with 123 foot frontage on Walnut street, by a depth of 60 feet, and will have 77,000 square feet of office space and four store rooms on the ground floor 60 feet in depth. The lobby of the theater will be in the center of the building. The exterior will be either of polychrome terra cotta or Indiana freestone, the decision to be made soon. It will be entirely fireproof.

J. C. Grunkemeyer, architect, has prepared plans for flat building to be builded at the southwest corner of Glenmore and Harrison avenues, Westwood. It will be 60 by 80 feet and will contain three stores and six suites, five of six rooms and the other of six rooms.

The Building Committee of the University Club has been letting the contracts for its enlarged quarters, the work being estimated to cost $75,000. Zettel and Rapp, architects, drew the plans.

L. F. Loring, president of the Kentucky Fuel Corporation, will build a brick bungalow at the southeast corner of Hermosa and West Eighth street, Price Hill. It will cost about $18,000.

Anton Rieg, architect, is making plans for three buildings, one of which is an additional floor, another a brick bungalow, and the last a bungalow, for Marcus Merazzi. Two of these are in College Hill.

Howard McClorey, architect, has let the contracts for the combination church and school for the Church of the Nativity, Pleasant Ridge, to be builded at the southeast corner of Woodford and Ridge avenues. The building will cost about $100,000.

Oscar Schwartz, architect, has been taking bids on a brick duplex apartment, 45 by 70 feet, to be built by M. and J. Wolf, on Burton Woods lane, near Clifton Springs avenue, Avondale.

The local office of the Wm. E. Dee Mfg. Co. has been moved from the 14th floor of the Union Trust and Bank Building to 311 First National Bank Building.

There has been a still greater falling off in the sales for clay products as noted by the Evans Builders Co., as reported by Mr. Bliss. The outlook is not very bright now for the coming months for building lines, as far as he can see.

The Queen City Shale Brick Co. say that while the demand for brick has been fair in the past, the situation has by no means been rushing, and the indications are that the coming months will find a lessened demand. The orders have been large enough to make things fairly good.

The Purcell Brick Co. find the demand for face brick to be slow now, and there is little to report that is worth while.

While there has been a fair call for brick and other clay lines with the Moores-Coney Co., it has not been more than ordinary. It is not likely that there will be much improvement from this time forward.

The Builders Material Co. see nothing of a very promising nature in the face and building brick demand. There has been a very limited amount of construction work, and naturally a slow call for clay lines. CINCY.

ZANESVILLE'S INDUSTRIES.

From Zanesville, the hub of southeastern Ohio Chamber of Commerce, comes a pamphlet called "Industrial and Mercantile Zanesville," which is an especially pleasing thing to review, because the big factors in industrial Zanesville are the clayworking plants.

Zanesville is fifty-three miles east of Columbus and seventy-five miles west of Wheeling, on the national road, which has recently been paved between those cities. The city proper and its immediate environments shows a population of 40,000, and the industries include a great chain of clay working plants. There are three tile plants—the American Encaustic Tiling Co., the Mosaic Tile Co. and the J. B. Owens—and they are said to be the largest of their kind in the world. They make a great variety of floor and wall tile.

Then there is a group of famous potteries, including the plant of S. A. Weller, the Roseville Potteries, the China Products Co., the Ohio Pottery Co., Peters and Reed, the Zanesville Stoneware Co., the American Clay Products Co. and the Brush McCoy Pottery.

In brick making proper there is the Burton-Townsend Co., which has done its part in helping put Zanesville on the map as a brick center, and which produces paving brick, radical chimney brick and building tile.

The Harris Brick Co. makes pavers and common and rough face building brick with a capacity of a million and a half a month.

The Zanesville Brick Co. has three brick yards in commission producing common and face brick for building purposes.

Zanesville is also on the map in the iron and steel industries and in glass making, but its outstanding features in the eyes of the readers of this paper are its great clayworking plants.

SHAFTING, BEARING AND BELTING.

SO MUCH OF THE ATTENTION of the trade and so much of the discussion in the trade papers recently in connection with power transmission has been centered around ball-bearings and electric motors that we are in some danger of neglecting opportunities to improve the machinery equipment where it involves proper shafting, pulleys and belting. The fact of the matter is, there is room in many instances to improve the condition of shafting, bearings and belting so that it will not only do better work and save more power, but it will not compare so badly with ball bearings and electric transmission. For that reason the purpose here is to discuss what is today considered the better practice in fitting shaftings in the matter of bearings, lubrication and in belting for power transmission.

Let us take it for granted that the average man knows that shafting is to be properly aligned and leveled and understands how to go about doing this. There are some special devices to be had for use in leveling shaftings and in aligning it, devices by the use of which one can get outside the line of pulleys and secure correct leveling and alignment. The main essential in devices of this kind is the self-centering rest to go against the shaft and an extending arm. In the case of leveling it is a hanger that goes over the shaft with an arm support for the straight edge extending down below. For cross alignment it is usually an arm with a forked end to go against the shaft. In both cases the self centering fork generally has an angle of 45 degrees. Such devices can generally be obtained from supply houses, or if not readily obtainable can be made in a local shop.

One of the first points that specific information should be had upon is that of the distance between the journals or bearings of shafting. This, of course, is governed to quite an extent by the conditions under which shafting is operated. There has been compiled, however, tabulated figures for what might be termed the average distance apart for bearings on shafting of different sizes operating different speeds. The following table is one that seems to be accepted by engineering authorities and will serve very well as a basis to start from.

Distance of Shaft Bearings.

Diameter of Shaft.	H. P. Transmitted 100 Revolutions.	Maximum Distance bet. Bearings
1½ inch	5	6.8 feet
1⅝ inch	6	7.2 feet
1¾ inch	8	7.5 feet
1⅞ inch	9	7.9 feet
2 inch	11	8.2 feet
2⅛ inch	14	8.6 feet
2¼ inch	16	8.9 feet
2⅜ inch	19	9.2 feet
2½ inch	22	9.6 feet
2¾ inch	30	10.2 feet
3 inch	39	10.8 feet
3¼ inch	49	11.4 feet
3½ inch	61	12.0 feet
3¾ inch	75	12.5 feet
4 inch	91	13.1 feet

Plainly in putting into practice any tabulated data of this kind it becomes imperative to be guided by common sense and local conditions. For example, if the pulleys are near midway between bearings and one is belted in one direction and one in another the pull of the belts to some extent offset each other. If both are belted in the same direction they double the strain on the shaft. Therefore if the shaft is directly overhead and the belts go straight downward it will be necessary to have bearings a shorter distance apart than if the belts were extending straight out from each side of the line shaft to some countershaft.

Of course the power transmitted is a factor too and this is so interwoven with the matter of speed that it becomes a bit confusing at times. Sometimes a small shaft at high speed will transmit power over small pulleys and light belts comparable with that transmitted by slow shaft over larger pulleys and heavier belts. A little thinking about this, and the exercise of horse sense, however, will with the table given above point the way with a fair degree of clearness to placing the bearings and shaftings.

A more interesting matter today in connection with shafting and bearings is that of reducing friction and insuring proper lubrication without persistent attention while the machinery is at work. To this end it is well in overhauling the plant and putting in new boxes and bearings to investigate the new offerings in journal boxes and especially those which provide special methods for lubrication.

There are two special methods of lubrication of particular interest in this connection and which do much to reduce the friction load and to save time in looking after the machinery. One of these is what is known as the ring-oiling type of journal. There is provided an oil reservoir beneath the bearing in the journal box in this case, and some type of rings or chains used to carry this up to the top and keep it circulating through the box. The rings or chains hang loosely over the journal and extend into the oil reservoir beneath. While the shaft is in motion it causes the ring to revolve slowly and this carries oil up to the top of the journal and provides lubrication without any attention on the part of the oiler for an indefinite period. Reports indicate that when properly fitted up bearings of this kind may be run from one to three years without attention. Generally, however, it is better to go over them two or three times a year to see that they are alright and that the oil has not been exhausted through leakage or something. Also they should, of course, be emptied out occasionally and filled with fresh oil or the old oil filtered to clean it of foreign particles.

There are several patterns or makes of this ring-oiler type and they certainly offer advantages over the old type with the open oil hole in which oil is squirted now and then and runs through and goes to waste and, in which heating soon follows through lack of careful attention.

Another type of bearing belonging somewhat in this class but differing from it in detail and in lubricant used is what is known as the compression grease cup type. In this case grease is used instead of the ready flowing liquid oil and is contained in especially designed reservoirs which by compression feeds it to the journal and provides lubrication through long periods of time.

There is not only an opportunity to save labor, that is the time and attention of some mechanic in oiling and looking after the bearings by putting modern journal boxes in the place of the old types, but there is also a gain in power efficiency in that it insures better lubrication and reduces the friction element. And the saving in time and power is a much more important item today than ever before, consequently such changes are more readily justified.

Another place to affect a saving in friction and power is in the use of belting. Indeed when shafting, bearings and belting practices are all brought up to the modern possibilities the result is so good that it does not show up very badly in comparison with electric transmission, and ball and roller bearings. In this connection a recent review in an engineering paper says that while in some cases ball and roller bearings show 40 and 60 per cent. saving in friction as compared to ordinary bearings, that these represent the maximum under conditions favorable to the new offerings. Under comparatively low speeds and moderate loads to which the line shafting is subjected the showing is much less, in fact, under some conditions the showing is no more than 5 to 10 per cent. better for ball and roller bearings than a properly equipped shafting and belting in babbitted bearings. This should serve to give encouragement to those who would improve and put into good condition their shafting, bearings and belting.

Belting plays its part in load wasting when too much strain is put upon it to prevent slipping on the pulleys. It is through its grip on the pulley face that the belt transmits its power and the science of belt logic indicates that the belt strains should be made as light as possible consistent with its load carrying requirements.

There are two primary requisites in the care and operation of belting. One is to preserve the belts, and the other is to keep the surface in such a condition that it will cling to the pulley and not slip.

Belts are made of various kinds of fabric—leather, canvas, camel hair, rubber, balata and so on. All of these are animal or vegetable products and all, running as they do under high stresses at high speed and under heavy loads, are subject to rapid deterioration unless their vigor and health are maintained.

The economy of such transmission of power is entirely dependent upon the efficient transmission of such by these mediums.

Under ordinary conditions i tis not particularly high. To prevent loss of power through slippage the belts are run tight. The tension in its turn wastes a good deal of power in overcoming the friction produced by such tension, while the tension breaks the laces, stretches the belts, consumes excess oil in bearings, and costs money to maintain.

Many preparations are on the market in the form of belt dressing to prevent slipping and to preserve the belts. Some prevent the slipping to some degree, but many of these are harmful to the belting. Others preserve the belting to some degree but are not very successful in overcoming the slipping.

So in overhauling your equipment this winter give a little extra attention to the subject of belts and their care. See how much you can reduce the strain and improve the pulling qualities of the belts. Sometimes the purpose may best be served by the use of tightness or idleness. At other times it will be a matter of cleaning and dressing the belt surface. Whichever method you follow, however, should result not only in longer life and more satisfaction with your belts, but also in the saving of power and labor. That of itself will make an item worth while.

BUILDING MATERIAL INVESTIGATION.

The Merchants' Association of New York has through a committee started a movement for state and federal investigation of the building material situation. The idea is to determine whether or not there are organizations in building material to control prices. This is something we are likely to hear and have quite a lot of throughout the country during the winter. The cost of building has been so high and the need for housing is so urgent that considerable agitation has resulted, and out of it we will have a lot of investigations. As to the merits of these and their beneficial results there is plenty of room for argument, which will not be entered into here. The point is that the investigations are in the order of the day, and the trade might as well be prepared for them.

CORRESPONDENCE.

THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Getting a Good Start.

Editor The Clay-Worker:—

I have just bought machinery and am starting a plant here for the manufacture of hollow ware and sewer pipe, so being in the clay business, I will be much obliged if you will enter me on your subscription list starting with the October issue. This business is new, so I will want all the literature on the subject I can get.

Yours truly,
Monterey, Mexico. H. LARRALDE.

Brick Displayed to Advantage in Industrial Exposition.

Editor The Clay-Worker:—

I am sending you a photo of our company's exhibit at Kokomo's recent Industrial Exposition, thinking same may be of interest to some of your readers. The exhibit was prompted by a desire to display to advantage our famous Kokomo Red Sand Mold brick, and to further the idea and good logic of permanent construction, so aptly expressed in the little slogan "Build with Brick." We feel much good will come from this form of advertising.

This was Kokomo's Seventh Annual Exposition, and it was a decided success. It drew crowds from all over northern Indiana, the total paid admissions being 78,000 for the week.

O. M. BOOHER,
Manager the Kokomo Brick Co.

Leased Clay Land to New Company.

Dear Mr. Randall:—

Enclosed find check to cover my subscription to The Clay-Worker for another year. I have been carrying on the clay business ever since Mr. Bramlett's death in February, but have recently leased our holdings here to the Enid Clay Company. However, I still want to keep in touch with the ceramic industry, so you may continue sending the magazine to my address at Enid, Miss.

Yours very truly,
MRS. M. M. BRAMLETT.

Harding a Champion for Brick Roads.

Editor The Clay-Worker:

I am inclosing you editorial page from Marion Star, which you know is the paper of our next President. While this is an old issue I commend to you the marked editorial herein. Please remember that Marion County around the city of Marion is full of lime-stone and naturally the lime-stone interests dominate in Marion and have been insistent in the building of lime-stone pikes. Please note that even though the most prominent men of Marion—most of them personal friends of Mr. Harding were for stone roads, Mr. Harding was not afraid to champion brick roads in the interest of more permanent highways. If consistent I would like to have you use this editorial in your next issue with such comments as you see fit to make.

There are a lot of people who will advocate brick roads but few of them will champion them in the face of pronounced opposition on the part of their friends. Such a champion certainly shows the courage of his conviction and is entitled to recognition at the hands of the brick men.

With best wishes, we are

Very truly yours,
The American Clay Machinery Co.,
By F. L. Hopley,
Advertising Dept.

We are glad to publish the editorial which appeared in Mr. Harding's paper, the Marion Daily Star, complete as follows:

THE VALUE OF BRICK ROADS.

"The decision of the county commissioners to improve a mile of the Marion and Bucyrus road, in north Marion, with brick, is not only highly pleasing to those who have noted the distressing condition of this main highway of travel, but it is accepted as a hopeful sign that the commissioners are going to give favorable consideration to brick surfacing for all future improvements of the main highways. The adoption of the paving brick for road surfacing will prove the most notable step toward permanent road improvement ever made in Marion county. Brick surfacing makes not only the most enduring work, which proves the cheaper in the course of years, but it is more sightly to the eye, more easily covered by vehicles of all kinds, but more comfortable to travel, and largely spares the homes along the route the intolerable dust of the dry seasons.

Attractive Display of Kokomo Red Sand Mold Brick.

This commendation of brick is not written because of the comfort it affords to residents or motorists. It is not written from the motorist's viewpoint at all. We are thinking of getting a permanent improvement for the vast expenditure made in this country for improved roads. Within the past three years large sums have been expended on the Prospect and Caledonia roads, which were made into beautiful highways for about ninety days, but are now, after less than two years' use, in disappointing condition. No great blame is to be laid at anybody's door. Our commissioners thought they were getting good roads, but experience is proving that no macadam or gravel construction will stand under the trying and excessive driving of the present day. Perhaps a road patrol, seeing to immediate repair, whenever a break shows, would add to their durability, but we have no patrol. Brick would not require this constant watching, and would yield to more ready and more effective repair when any repair is needed.

The really notable improved road work is being done with brick. It costs considerably more for the initial expenditure, but ten years of use and the attending repair account will prove it to be cheaper in the end. Even in Florida, where drainage needs little attention and the foundation is constructed on sand, the boasted road building today is surfaced with brick.

The average Marionite, who delights to boost home industry, may unthinkingly proclaim this commendation of brick over macadam to be disloyal to our great crushed stone industry. But it is not so. Our stone must be used for the substructure for brick the same as in the tarred, asphalt-bound or water bound macadam road. We shall use few less stone, and we shall get ten times the value in improvement to that we have lately received. Our expenditures are too large and too important not to be getting more permanency. We must turn to the brick surface to get something to endure the test of modren travel."

Good Opening for the Right Man.

Editor The Clay-Worker:—

We are beginning the tiling of four to six thousands acres of land in Alabama and believe we can save money by making our own tile, and at the same time get some revenue from the manufacture of brick, hollow tile, etc. We would like to hear from some one who can come here on a salary basis and install and operate such a plant. It is really a good opening for a good man.

Yours very truly,
N. J. BELL ESTATE.

Burning Brick with Pine Slabs in Oregon.

Editor The Clay-Worker:—

I have been with the Bend Brick & Lumber Company here in Oregon for the last five summers doing the burning, and I want to subscribe to The Clay-Worker for my own personal use. We perhaps burn our brick a little different from most manufacturers, as we use pine slabs. This season's output will be better than 3,000,000. The demand for brick is good, for Bend is getting to be some little city. On account of the altitude the season is rather short, from May 1 to September 20.

With best wishes,

Sincerely yours,
FRED KOTTWICH.

ASSIMILATING THE FOREIGN BORN.

WE HAVE WHAT is called an inter-racial council with headquarters at 233 Broadway, New York City, which claims for part of its purpose the proper assimilating of the foreign born who come among us by teaching Americanism. Just who is back of this or what the underlying idea is we do not know, but there is one part in the argument put forth that we can heartily approve, and that is the need for foreigners to learn our language so that they can better understand the real doctrine of Americanism. Those who come to us from other countries should consider it a part of their voluntary duty to seek for immediate knowledge of our language. Also, it is a part of our duty to encourage them in taking up and learning our language. Then, if they fail to do this, it is a part of our duty to eventually tell them they are in the wrong country and should go back from whence they came.

NOTES FROM DIXIE LAND.

OCTOBER ACTIVITIES in the brick, clay and building industries hold up with fine open, sunny weather, so different from last October, and despite the rather adverse drop in prices on cotton, lumber, sugar and a few other Southern staples that have heretofore been phenomenally high. The very prosperous conditions in these things the last few years, however, left plenty of money on hand, and building projects in towns and cities are going forward on a scale protracted from last spring. Labor conditions are better than they were in the spring, and so are transportation conditions. Financing seems to have tightened up slightly on the eve of the presidential election, but this, too, is expected to loosen up.

Upwards of 200,000 people attended the Tri-State Fair at Memphis, which closed October 2. The exhibits were of an interesting character, and the brick and building trades products were by no means least attractive. The Improved Brick and Tile Co., of Meridian, Miss., had an attractive building and display along the midway. John A. Denie and Sons Co. had a display of fire brick, terra cotta, sewer pipe and their various materials. Quinn Province was in charge of the booth.

Fischer Lime and Cement Co. had a display, calling attention to sewer pipe, fire brick and other materials handled by them in Memphis and Little Rock. The elegant new warehouse addition of this company on Walnut street, Memphis, is nearing completion. It will double their space permanently.

The York Lumber and Mfg. Co. of Memphis had an exhibit at the Tri-State Fair, showing roofing.

The Flexatile Roofing Co. also had an exhibit on the grounds.

The Moss-Devoy Brick Co., a recent entree in the Memphis field, also had a booth, calling attention to their brick product.

On October 7 the new State Theatre was formally opened to the public at Memphis. Two carloads of visitors came from New York City, and were greeted with anvils, a parade, a reception and banquet. The theatre is of brick, with much fine fireproofing, tile and terra cotta work throughout. It has been under construction for nearly a year.

Several brick business structures are going up on portions of Main street and Madison avenue, Memphis, and throughout the outlying sections for a good many blocks. Residence building is still moderate, but a good deal of it is brick and clay products in ornamentation and roofing are very numerous.

The chinaware concerns in Memphis, such as the Memphis Queensware Co., wholesalers, on Union avenue; Gifford-Crowell Crockery Co., 115 S. Front street, wholesalers; Ichenhauser & Co., glassware, etc. S. Main street near Gayoso, are all active in the autumn lists and getting a big inquiry already on holiday goods.

Powell-Graham Co., North Memphis, have built an addition to their building material place in the nature of warehouse addition.

Good progress is being made on the new home of the Western Union Telegraph Co., James Alexander Construction Co. contractors. Numerous garages and automobile concerns are going up in Memphis, fireproofing materials, tile and other clay products being used in most of them.

Nashville and Chattanooga, Jackson, Tenn., and other towns in the state report good October building conditions.

DIXIE.

POINTERS ON PLANT MANAGEMENT

Things of Direct Interest to Plant Managers, Superintendents and Foremen in Actual Charge of Clayworking Operations.

By W. D. Richardson.

A BRICK MANUFACTURER was recently lamenting to the writer the fact that he was tired and wanted to take a little vacation from work, yet found himself unable to stay away from his plant for more than a day or two at a time. This was but one complaint of a number that had been heard during the past few years, which suggests a need for a better order for organization for plant management amoing the clayworkers. There have been occasions when brick men have been kept from attending conventions of the trade because their presence was required at the plant, and there are probably many who have failed to obtain vacations during the past summer which they felt they deserved for the simple reason that they felt a necessity for being personally at hand at their works.

Distributing Responsibility.

It will probably be readily admitted that every business man should seek to so organize the business and delegate authority and responsibility that he can not only be free from many burdens of detail when he is present, but can absent himself for any reasonable period of time without any serious hitches in the work or business resulting therefrom. The general qualifying statement which will follow here, however, is that the making and burning of brick and tile is complicated with technology and varies so in local conditions that it is very difficult if not impossible to build up and train an organization which will function properly all the time and in which there may be provided an understudy of practically every man of responsible position in the organization. Admittedly there are difficulties, but that is rather more reason for instead of an argument against striving to perfect and train an organization that will function smoothly regardless of whether the manager himself is present. Moreover, we have other industries just as complicated and technical in their way where such organization is being developed, which should lend encouragement to effort among clayworkers along the same line.

Too Much One-Man Business.

One trouble with it is we are still clinging some to traditions and past practices when we ought to be developing new ideas of organization along with new methods of manufacture. In the earlier days the brick making plant was a sort of one-man institution so far as supervision was concerned. During the present generation it has developed out of the brick yard to a manufacturing institution with scientific study and improved methods in manufacturing, while meantime we have to a great extent adhered to the old practice of personal supervision on the part of the management. This is the thing we need to get away from now, and the object of the present discourse is to suggest the successful operation of his business.

Studies in Modern Business.

It would be a wholesome thing for the future in the clay working industry if the plant owners and managers and also ambitious fellows, both in the offices and out in the plants, would put in some of their winter evening time studying some of the modern lectures on business organization and business management. There are a number of libraries of this kind gotten out by educational institutions with a supplementary course of lectures. There are lecture courses at the Y. M. C. A. evening school and at various educational institutions. Also there are periodical publications devoted to system and business. There will be found among them lots of untried theories and lots of other matter that will not fit into the clay working industry, but no man can make a thorough study of the better theories of modern business without getting some worth while ideas, many of which can be adapted to any business he may be engaged in. There are many different plans given in detail of how to organize business and delegate authority from the plain line organization taken from military life to some rather complex functional organization broadened out to fit the complications of large industries. One of these functional organizations, for example, will start out by the manager delegating authority, say to a superintendent of production, chemist and an engineer, and these in turn oversee each their various divisions, sometimes overlapping, and in turn passing authority on to group foremen.

Organization of this kind looks simple and easy enough and to quite an extent has been put into effect in the industry, but there is always some weakness cropping out which indicates a lack of proper spirit somewhere or the right kind of understanding.

Problems Peculiar to Clay.

For example one manager after delegating authority and organizing his forces may from force of habit keep having various incidental details submitted to him all the time. If he does this he not only burdens himself with work and makes it difficult to take a vacation, but he is training those to whom he has delegated authority to depend upon his judgment instead of exercising their own, which is not good for their development into bigger factors of responsibility in the business.

On the other hand one frequently hears complaint on the part of managers that foremen and superintendents won't think for themselves and use their own judgment, but keep coming to them with things which they ought to attend to themselves. Then, in addition to these faults there is involved technical problems which hinge some upon a natural gift. This applies more specifically to burning and to looking after the kilns in detail and this problem is generally different at each plant. This makes it difficult for men to be trained like in some other lines of industry. A man can become a competent steam engineer and he is competent anywhere he goes and finds similar conditions so far as technology is concerned. In the handling and burning of clay and shale it is never the same thing. A man may become expert in his judgment at burning operations at one plant, then go to another and make a miserable failure unless he is quick to perceive the difference and has a gift for understanding it and adjusting himself to changed conditions.

These are some of the problems involved in striving to so organize a clayworking plant that the manager may be freed from a lot of detailed burdens and may absent himself for a vacation when he feels disposed without any serious handicap to the progress of the work.

A Matter of Understanding.

Plainly there is involved here a question of understudy, every man from the manager on down should be training someone else as an assistant who can eventually take on the work when occasion requires. This admittedly is a lot easier to say than it is to do because training understudies in the clayworking industry involves not only the matter of technical complexities in the work itself, but also the question of natural gift or talent on the part of those one undertakes to train. We find in a study of industrial life that some men have a gift for management, some have a talent for handling men, and some have a knack for doing difficult skilled work easily, and so on. Sometimes a man may have a mixture of several talents of this kind, but often the men who shine at some particular thing have their talent in this respect emphasized at the expense of their talents for other things and are somewhat limited in their scope of accomplishments.

These are things to study and experiment with. People are today more perhaps than ever before experimenting by shifting men about, changing them from one job to another and from one department to another, partly to broaden their knowledge and to keep alive their interest through these changes. Perhaps the biggest possibility in it is in that through this means an observant manager may discover what each man who shows merit has the best talent for and can then map out his line of progress and development.

If both managers and the ambitious men under them will, as suggested above, make an earnest study of modern methods in business organization and management, and then take the theories and experiments found there and couple it up with their own practical knowledge and understanding of surrounding conditions, they can get some light on the subject that ought to help along considerably. There is such a thing possible as organizing a clayworking plant and its management and so delegate authority and distributing responsibility that the manager or anyone else along the line may take a vacation without disorganizing the work or causing things to go wrong.

THE SAFETY SLOGANS.

ONE TROUBLE with this safety agitation and the safety slogans we are developing is in that we are getting so much and using them so persistently that they are losing their effectiveness. There is entirely too much theoretical talk, too much broad cast propaganda, and not enough thoughtful development of everyday habits of safety. There is no need for any argument on the point that every employer sincerely wants to prevent accident, neither is there any question but what the average worker wants to prevent accident, nor that both will benefit from the result of few accidents. The question of the day is that of whether or not it is advisable to keep up such a perpetual bombardment with safety ideas. Factory bulletin boards have already been overworked with slogans of this kind and too often the results are disappointing and sometimes there is an actual reaction to carelessness resulting from the persistent preachings of safety. Let us strive for safety, but let us do it within reason and earnestly and intelligently rather than by reckless driving with propaganda.

THE OPEN SHOP AND THE PRESS.

The charge has been made that very few newspapers have come out openly as advocates of the open shop. If this is true it is lamentable and deserves attention by business men. Practically all business and industrial organizations indorse the open shop principle as essential to the welfare of industry and of the country as a whole. This is good, but it is not as effective as it would be if the fact were portrayed more generally by the daily newspapers. Why not try having a talk with your local newspaper men on this subject, and insist upon a fair stand and a frank expression of this stand?

PROCTOR & SCHWARTZ OPEN A BRANCH IN PITTSBURGH.

Proctor & Schwartz, formerly the Philadelphia Textile Machinery Company, after their absorption of the Ceramic Equipment Company of Trenton, N. J., eliminated the latter office and shop so that the main business and works is now carried on through the Philadelphia headquarters, where the plant is located. However, the business of this concern has so expanded that they have opened up a Pittsburgh branch which will deal for the most part in the clay and porcelain field. Mr. J. L. Buckley, long identified with the clay trade, formerly representing the Philadelphia Textile Machinery Co. and later the Ceramic Equipment Co., has been placed in charge of the Pittsburgh branch of their ceramic department.

J. L. Buckley, Pittsburgh, Pa.

The location of the department at Pittsburgh with Mr. J L. Buckley managing same, will give this well known ceramist an opportunity to devote all his time to this service and enable him to be in closer touch with the ceramic industry in the central west particularly. Mr. Buckley has made many friends in the clay trade, all of whom will be glad to know he is located closer to that section of the country wherein his clayworking activities took place extending over a great number of years.

A HOME OWNING PROPOSITION.

There is reported a movement on foot to hold an "Own Your Own Home" exposition at the Coliseum at Chicago during the week of March 26 next. It is said that all kinds and classes of building materials and furnishings will be exhibited at that time. If this idea is worked out it not only means an opportunity for clay products, but it should mean a developing of the home-owning spirit that will lead to greater effort next year at home building. It is also suggested that many similar expositions may be held throughout the country, the object being to promote interest in home-owning and to develop active work in home building next year.

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we again inaugurate a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

Machinery for Encaustic Tile.

QUESTION: Can you give me the address of anyone specializing on machinery for the complete process of making encaustic tile?

Answer: Hetherington & Berner, of Indianapolis, and the Crossley Machine Co., Inc., of Trenton, N. J., make full line of machinery for products of this sort.

As To Drying Hollow Block.

QUESTION: Will you kindly advise me whether it is practical to dry hollow tile building blocks and other hollow ware by the open air method?

Answer: It is possible but not practical, if any considerable amount is to be turned out. Character and quantity of output of course has a marked bearing on the question. Would suggest if this is a new venture, and there is no one associated with the firm who has had practical experience in the manufacture of hollow ware, it would be well to get in touch with an experienced man and go over the problem with him. Much money may be saved your firm, as mistakes in planning and laying out a clayworking plant are very costly.

Difference in Weight of Green and Burned Ware.

QUESTION: Can you give me the difference in weight of dry green clay in its raw state and after it is burned?

Answer: This depends upon the character of the clay and how it is dried. Air dried clay, even though it is dried in the sun, will contain from two to five per cent. of moisture.

A pure clay, such as some of the flint fire clays, kaolins, and bond clays will contain nearly 14 per cent. of combined water.

Such clays as they come from the pit, apparently dry, will contain 16 to 19 per cent. of water, which is driven off in burning.

Impure clays contain less and less combined water, and they do not hold hygroscopic water so tenaciously as the fat clays and the total water content may not exceed six per cent.

An unusual clay came to our attention a short time ago. It came by parcels post and had been several days on the road.

It was apparently dry at least the wrappings were not dampened by it, and it had no feel of dampness. A test of it showed over 23 per cent. hygroscopic water and 14 per cent. combined water.

Here is a clay which your correspondent would call dry in the raw state, yet it contained 37 per cent. of water without showing it.

The loss in burning is not all water. Some clays, not unusual in their character, contain as high as three per cent. of sulphur, as pyrite and gypsum, which is largely driven off in the burning, particularly the sulphur from the pyrite. Then, too, some clays are very high in bituminous matter, which is driven off during the oxidation period.

The common clays and shales used in the manufacture of bricks, tile, paving blocks, etc., are always impure, and seldom have a content of combined water exceeding eight per cent. and if they are quite sandy the combined water is less than this. In such clays, making allowance for hygroscopic water, sulphur, and carbon, a fair average loss will be around 10 per cent.

GENERAL ELECTRIC CO., PITTSFIELD, MASS.

The General Electric Co., of Schenectady, N. Y., is installing an entire slip house at Pittsfield, Mass. They intend to start actual operation by the first of the year and will employ several hundred men. The Canadian branch of the company, known as the Canadian General Electric Co., is installing an entire new plant at Petersboro, Ontario, and will also start operation within a short time.

LOCKE INSULATOR CORPORATION.

The Locke Insulator Corp., of Victor, New York, is now erecting a new and up-to-date plant at Baltimore, Maryland, which will take up several acres on South Charles and Cromwell Streets. They intend making the very best line of white porcelain insulators and will employ in the neighborhood of a thousand men. The erection of the plant is under supervision of Mr. W. S. Austin.

CLAY PLANTS IN NORTHEASTERN OHIO BUSY.

Sewer pipe and fire brick industries in Tuscarawas county, Ohio, are preparing for their greatest output after crops are moved. A 75 per cent normal allotment of cars is expected. At present yards are covered with finished products awaiting cars. Enough orders are on the books or are in prospect to insure continuous operation for a year and a half, it is said. Few clay plants are rejecting applicants for employment despite the congestion in shipping. No improvements are being made at present although several plants are on partial capacity while repairs are being made and machinery being overhauled for peak production. Plants in the Uhrichsville district are increasing their force in anticipation of better shipping conditions. Employes of the Pennsylvania railroad shops, who have been laid off, are finding employment in local clay works. One sewer pipe plant near Uhrichsville is being operated with emergency help, owing to the company's refusal to recognize the clayworkers union, which was organized two months ago. The defection due to the walkout has been made up by employment of railroad shop workers and former rubber plant workers at Akron.

Three hundred salesmen of the Central District of the H. W. Dubiske and Company, of Chicago, fiscal agents for the Continental Clay Company, who recently established their executive offices here, assembled at Canton, Ohio, recently, and made a tour of inspection of the company's holdings in that district prior to opening their campaign for the refinancing of this company. The H. W. Dubiske is one of the best known firms of this kind in the country, having 72 branch offices scattered from coast to coast.

The refinancing of the Continental Clay Co. and absorbing of more than 25 plants, will give Canton the executive offices of the largest clay products in the world, according to J. A. Calhoun, president of the company. Following the tour of inspection a banquet was held at the Courtland Hotel. H. W. Dubiske, president of the company, and Harry Crooks, of the legal department of the company, gave addresses. M. J. Traub, superintendent in the central district, was toastmaster.

With a nominal capital stock of $20,000 the Ward China Company has been formed to build a pottery plant at Canton, incorporators being some of the former employes of the American China Company of that city. The Company so far is composed of James J. Ward, Sr., Richard Podwell, Luke E. O'Brien and Hugh J. Doran, Jr. Semi-porcelain ware will be manufactured and also a line of specialties. The plant is to be built on a site on Eighth street owned by Ward. Erection of the buildings will be started soon.

BUCKEYE.

POWER TILE PRESS.

Mr. David Crossley, of the Crossley Machine Co., has recently patented a new power tile press. This press compared with others on the market seems to be second to none. It is understood that the Matawan Tile Co., of Matawan, N. J., has several of these machines in operation and they are giving the best of satisfaction. The Matawan people have been considering a power proposition for sometime and have investigated all the different machines on the market and finally settled on the Crossley type. This machine will turn out from 1,200 to 1,400 square feet of tile per day.

BRICK INDUSTRY IN AKRON TO BE REVIVED.

Possibilities of a revival of the brick industry in the Akron, Ohio, district are being considered by Akron business men because of the increased cost of building materials. During the past six or seven years the brick industry which once flourished here has gradually dwindled until today very few companies are operating. The brick producing industry was given its death blow in Akron several years ago when the wages of brick layers began to mount and the cost of constructing brick houses became nearly prohibitive, officials of the Building Exchange say. The brick yard revival is made possible in Akron because of the nearness to the city of the clay mines. The cost in utilizing this clay for brick would be somewhat higher in Akron than in portions of the state where coal is available near the clay fields.

GOOD SALE FOR COLUMBUS CONVEYOR CO.

This day of labor saving devices is finding coal unloading an awakening field wherein the manufacturers of many materials are saving much in time and expense by the adoption of methods that greatly reduce these two elements.

In this connection the Columbus Conveyor Co., Columbus, Ohio, is receiving quite a number of orders for their equipment. During the last two weeks of September they booked the following business: Automatic Unloader with 375 feet scraper conveyor, Independent Refining Co., Oil City, Pa. Automatic Unloader with 100 feet scraper conveyor, Crystal Oil Works, Oil City, Pa. Automatic Unloader with 100 feet scraper conveyor, Titusville Oil Works, Titusville, Pa. Automatic Unloader with 160 feet scraper conveyor, Oil Creek Refining Co., Titusville, Pa. Automatic Unloader with 50 feet scraper conveyor and pivoted chute, Tri-State Glass Co., Toledo, Ohio, and 30 feet continuous bucket elevator for handling sand and gravel, Weaver Bros., Cincinnati.

They have also received a number of orders from wagon mines for their machine for loading of coal onto railroad cars. When thus employed the reciprocating feeder is placed in a pit over which a hopper is constructed and into which the coal is dumped by wagon or truck and fed into the continuous bucket elevator, the latter discharging into a pivoted chute and distributing into the railroad car. This equipment has been sold to the Tri-State Brick, Tile & Coal Co., Ironton. Ohio, The Bates Coal Co., Oak Hill, Ohio, The Garrets Run Coal Co. of Kittanning, Pa. This labor saving device is well suited to the needs of any clay plant using any great amount of coal.

EXPORT SALES OF BRICK MORE THAN DOUBLED LAST YEAR.

STATISTICS JUST ISSUED by the United States Department of Commerce will doubtless prove something of a surprise to our brick manufacturers, inasmuch as they show a tremendous jump in foreign sales for the calendar year 1919, the figures considerably more than doubling those for the preceding year.

Not only has the demand for our brick increased so largely, but we find that its distribution takes in countries which never before 1919 bought our brick.

Taking up building brick we find that in the year 1919 we sold none whatever to any European country—although, it may be mentioned incidentally, during the first six months of 1920 our building brick has been going to both France and Belgium in considerable quantities, to say nothing of increasing sales of brick-making machinery and equipment in those and other countries.

With fire brick the world situation is decidedly different, but this line also shows variations which will be surprising in some respects.

Our exports of building brick, common and face, in the calendar year 1919 totalled $248,690, as against $117,263 in the preceding year. In 1919 our foreign sales in these lines went to Bermuda, Canada, Guatamala, Honduras, Nicaragua, Panama, Salvador, Mexico, Newfoundland, Labrador, Barbadoes, Trinidad, Tobago, Cuba, Dominican Republic, Argentina, Brazil, Chile, British Guiana, Peru, Venezuela, British Oceania and French Oceania.

The most notable phase of our export trade in building brick last year was the fact that we shipped to Canada $195,569 worth, whereas in the preceding year the amount sent to that country was only $74,613. Our second best market for building brick last year was Mexico, to which country we shipped about $24,000 worth, as against $18,565 in 1918. The Dominican Republic bought $9,031 worth in 1919, and $5,802 in 1918. Panama dropped from about $4,000 worth in 1918 to $60 in 1919.

Fire brick is the big export item in our trade in the brick line, last year totaling $2,747,512. These were shipped to practically the entire world—as far as Aden, on the Red Sea, the Belgian Congo and the west coast of Africa. Fifty-four countries call themselves our customers for fire brick, and of these we shipped last year to Canada fire brick valued at $1,667,220, to Cuba $339,660, to Mexico $206,800, to Italy $104,264, to Peru $65,677, and to China $53,439.

The foreign sale of fire brick ranges itself in a peculiar way. For instance, we find that Canada in 1918 bought fire brick of us to a total of $3,832,297, while last year (with her needs supposedly greater) Canada purchased of us less than half that amount. France in 1918 purchased of us $87,782 worth, and last year dropped to $5,712. Chile, in 1918, used $159,498 worth, while in 1919 the total was only $44,483. Japan, in 1918, imported United States fire brick worth $54,433, and last year $19,801.

The Department of Commerce offers no explanation of these wide variations, which show that we are gaining largely in some foreign markets while we are losing heavily in others, but it is believed that the most important single factor contributing to such conditions is the matter of transportation, which was less available for brick cargoes in 1919 than in the preceding year, although conditions in this respect are now fast improving under the United States Shipping Board's new policy. The scarcity of transportation facilities in 1919 would, in a measure, account for the decreases; but what about the increases?

In common and fire brick clay the government's report shows total foreign sales in 1919 of $512,072, of which amount $262,501 was of fire clay. In these lines, also, we find Canada our best customer, that country taking $406,385 worth, about equally divided between common and fire clay.

Reports from France and Belgium, as well as several of the Latin-American countries, show a very favorable market for United States brick-making machinery, although it is said that but little, if any, real effort is being made at this time by our manufacturers in these lines to cultivate the trade.

ALFRED T. MARKS.

Written for The Clay-Worker.

PRICE OF COAL AND PRICE OF BRICK.

MANY ARE ASKING why, in the general decline in prices of nearly all commodities, the price of brick is as high or higher than ever before. Lumber dealers say that prices of lumber October 1 averaged 26 per cent lower than March 1, so that a frame house can now be built without fear of excess cost of lumber, since there is no probability of further decline, on account of the depletion of sources of supply and the increase to freight rates. Price of fuel cuts no figure in the cost of lumber. But what about brick? What keeps the price up?

One important factor in the cost of brick is the price of coal. Nearly every brick manufacturer today knows how much coal it takes for the making, drying and burning of a thousand of his brick, on an average for the year, so when there is a rise in the price of coal he knows how much he must add to the price of his brick. He knows also that every rise in price of his product lessens to some extent the demand for it. Therefore, brick and tile manufacturers are vitally interested in the price of coal.

The brick and tile manufacturers, through their various organizations, have been spending a lot of time and money to prevent a raise in freight rates, and in this have not had the sympathy of the public, since the public generally has been convinced for some time that the railroads must have a larger revenue to meet the higher cost of operation and to make needed renewals and increase of equipment, and what the public wants most is better service. An equal effort by brick manufacturers to reduce the price of coal would have the sympathy and co-operation of everyone and would undoubtedly meet with better success, since an investigation would show that the extremely high price of coal is maintained by a strong organization of coal operators who are reaping a harvest in profits. Former Secretary McAdoo gave out some statements of these large profits and it was thought that he was guessing or exaggerating, but it was afterwards shown that he had the facts.

Coal mining today is one of the most profitable businesses In fact, it is a profiteering business, controlling one of our most vital necessities of industry and governing the supply and price of nearly every commodity. A natural product, stored in the earth before the creation of man and to the origin and development of which he has contributed nothing and to which he can add no value, except by mining and transportation, yet this gift of nature to all mankind is controlled by a comparatively few people, bonded together for their own profit, regulating the price of a necessity for which there is no adequate substitute! So far our government, on whom we rely for protection, seems to have been unable to give us relief. In war time they had a fuel commission that fixed the price of coal at the mines, but at such a figure that coal operators had never made so much money before, even though a part of the profits had to be returned to the government as war taxes. But war time prices have been more than doubled since the government gave up their control, with the excuse of increase of wages and shortage of cars, both valid excuses so far as they go, but entirely inadequate for the high prices now prevailing.

Fair Price Commissions are everywhere making investigations and rulings that have had some effect in reducing retail prices of many articles, and a few prosecutions have been made, but such retailers are not organized for resistance. When the Commission attacks coal, however, it is up against a strong organization of producers and dealers and not much headway has been made. But if the investigation is carried far enough and is backed by organizations of coal consumers, the fact will be brought out, as many of us know.

1st. It can be ascertained just what it costs to deliver a ton of coal on car at the mines, including all overhead charges and depletion, even under the abnormal and unreasonable prices now being paid to miners and laborers. Laborers at coal mines are now getting about $7.50 for an 8-hour day and a good coal miner can make $20 in 8 hours in many districts.

2nd. It will be found that the cost of production, even under present conditions, bears no fair ratio to the selling price, controlled by an organization.

3rd. The coal operator, protected by his association against competition, doesn't care what wages are paid to miners nor what the shortage of cars is, so long as the demand for coal is greater than the supply available and prices are regulated by his organization. In fact, he seems to welcome an excuse for his high price. He doesn't worry now about the shortage of cars, so long as he gets his share of them. He knows that his organization is regulating the selling price of coal accordingly.

Under present conditions many brick plants must shut down soon or pile up high-priced brick for the next building season. Why not have their own commercial organizations work with the proper government department to secure competent investigation of coal prices and a substantial reduction of same. It can be done with proper organized effort and the brick industry and every other industry and every individual man be benefited thereby. The brickmaking industry should take the lead in this, since the price of coal is such a large factor in the cost of brick, and since cheaper building material is so much to be desired in the present shortage of dwellings, business and public buildings.

There is no question before clay product manufacturers today so important in its bearings upon the welfare of the industry as the fuel question, no field of investigation more promising in its results than that of coal prices and fuel saving. We suggest that the various commercial associations of clay product manufacturers take united action, through committees and attorneys, first, in securing facts, and then in presenting these facts with arguments where they will be most effective.

A. CERAMIST.

NEW CONCERN TAKES OVER OLD NEW JERSEY PLANT.

A new company has been formed to take over the plant of the old New Jersey Clay Products Co., more recently known as the Standard Hollow Tile Co., where hollow tile will be manufactured exclusively. John H. Fritzinger, of Perth Amboy, N. J., for twenty years with the National Fire Proofing Company is at the head of the new concern, and associated with him will be John H. Miller, who has been with the National company for nineteen years, at the Perth Amboy office, and H. C. Cooper, who has been with the same company as ceramic engineer and assistant superintendent of the Lorillard works. Mr. Fritzinger is what may properly be known as a self-made man in the clay business, having started in the clay bank of the C. Pardee Works some twenty-one years ago. So rapid was his advancement that in less than two years he was superintendent of the Perth Amboy factory, and for the last six and one-half years, in addition to running the Perth Amboy works, he also has been in charge of the old Lorillard works at Natco, near Keyport, N. J.

BRICK ROADS IN RENO COUNTY, KANSAS

By W. M. Watson State Highway Engineer of Kansas.

WHEN THE WORD RENO is mentioned the mind usually pitcures that far western city where the troubles of married life are easily cast aside. To the road-building industry of Kansas this word has an entirely different meaning. We at once think of a certain county, located in the broad Arkansas River valley just west of the sixth principal meridian, slightly rolling and having a sandy loam soil. It is one of the largest wheat-growing counties of the state, which usually outranks the other forty-seven states in the production of this very essential food product. The mineral resources of the county should not be overlooked, for within the county is located one of the largest salt mines in the Middle West. Hutchinson, the county seat and principal city, is often termed the Salt City of the West.

The progressive farmers and business men of this county decided that the one thing necessary to the advancement of the county was the construction of a system of real hard surfaced road. They took advantage of the Benefit District law and formed districts for the improvement of seventy-four miles of road with a brick surface. To date the contract has been awarded covering 37.55 miles of 18 feet monolithic brick. The remaining miles are ready to be let as soon as conditions will permit.

Like a large part of the Arkansas River valley, this county is underlaid with fine gravel and sand. There is no stone suitable for road building found in the county, and the difficulty of securing adequate transportation for shipping materials renders it necessary to utilize local gravel.

Layout of Monolithic Brick Job Showing Use of Template Steel Forms and Brick Conveyor

Parish Template Used In the Construction of Monolithic Brick Pavement

The road from Hutchinson northwest through Nickerson, being located through a very sandy loam soil, offers exceptional opportunity for drainage and a uniform subgrade. For this reason the base was designed to be 3½ inches thick on the sides and 5½ inches in the center, using a 3-inch vertical fiber brick as a wearing course. On the remainder of the work the base is designed ½ inch thicker than on project 15. The type of construction selected is monolithic brick.

The concrete base is specified to have a mixture of one part cement, three parts fine aggregate and five parts coarse aggregate, or in the event a combined aggregate is used the mixture must give an equivalent strength to a 1:3:5 mix. The strength of a 1:3:5 mix is fixed according to the joint committee recommendation at 1600 lbs. per square inch in compression. After extensive tests the following table of proportions was devised for use as the equivalent mix, everything passing a ¼-inch screen being considered as fine aggregate, and all retained as coarse aggregate:

Percent of gravel retained on a ¼-inch screen.	Proportions by loose volume. Cement		Gravel
0-10	1	to	4
10 to 15	1	to	4½
15 to 25	1	to	4¾
25 to 35	1	to	5
35 to 45	1	to	5¼

The bulk of the coarse aggregate passes a 1-inch screen.

In the beginning of the work the base poured at a stiff consistency and struck off by the Parrish type of multiple steel template, using a 3/16-inch dry sand cement bed. The brick were laid direct on the sand cement bed before the base attained its initial set. The gravel aggregate, containing very little coarse material, produced a concrete with which it was difficult to obtain satisfactory results. When mixed sufficiently dry to permit the other operations it contained too little water to properly saturate the dry cushion with a consequent separation between the base and brick surface. When made with enough water to give the dry cushion a proper amount of water, due to the absence of coarse material, the concrete had little stability, rendering the operations of rolling and grouting exceedingly difficult, and making it almost impossible to secure a smooth surface. This trouble has been overcome by the use of a mechanical tamping machine operated directly on the base, and the elimination of the sand cement cushion. A marked improvement is noted by reason of this change. Rolling is done by means of a hand roller and the joints are grouted with a one to one mortar in three applications.

CONTRACT PRICES.

ITEMS	PROJECT NO. 15. SECTION.			PROJECT NO. 27. SECTION.			
	A	B	C	A	B	F	G
Contractor	Stamey & Mackey Cons. Co.	Stamey & Mackey Cons. Co.	Wheeler & Keleher Cons. Co.	Wheeler & Keleher Cons. Co.	Wheeler & Keleher Cons. Co.	Stamey & Mackey Cons. Co.	Stamey & Mackey Cons. Co.
Contract Awarded. Date	Oct. 10,19	May 12, 19	May 12, 19	Oct. 10, 19	Oct. 10, 19	Oct 10, 19	Oct 10, 19
Mileage	7.093	5.481	4.997	5.004	5.520	5.014	4.443
Average Haul (Miles)	½	1½	1½	2	4	8	8
Excavation in earth	$0.80	$0.60	$0.70	$0.97	$0.85	$0.75	$1.00
Borrow in earth	0.60	0.50	0.60	0.60	0.60	0.60	0.60
Monolithic Brick	3.85	1.40*	1.30*	3.92	4.15	4.30	3.75
Class A Concrete	35.00	15.00*	10.00*	35.00	35.00	35.00	30.00
Reinforcing Steel	0.07	0.06	0.10	0.07	0.07	0.07	0.07
Lin Ft Guard Fence	1.10	....	....	....	....	....	....
Small Trees	....	2.00	1.00	....	....	....	....
Large Trees	....	10.00	10.00	....	....	....	....
Rods of Hedge	....	4.00	2.00	....	....	....	....
Section Markers	....	45.00	45.00	....	....	....	....
Stumps	....	10.00	5.00	....	....	....	....
Raising Bridge Floor	400.00	....	....	....	....	....	....
Handrail Concrete	....	....	....	40.00	40.00	35.00	45.00
Cost Slab per Mile	$40873.00	$32110.00	$33095.00	$37426.00	$43962.00	$45407.00	$39774.00
Cost of Job per Mile	47998.00	35658.00	37335.00	45446.20	50942.26	57895.00	46131.00

*Materials furnished by County. Cost of following unit prices not included in this price.
Brick f.o.b. Plant @ 0.98 per sq. yd. Freight rate 9½c per 100 lbs.
Cement f.o.b. Plant @ 2.50 per bbl. Gross freight rate 12½c per 100 lbs.
Gravel @ 0.25 cu. yd in Pit.

No expansion joints are used, and all construction joints are reinforced with ½-inch bars, twelve inches center to center, in order to reinforce these points, which are believed to be weak points in the base construction.

An inspector is kept both in front and behind the mixer. One is employed continuously to check the proportioning of the concrete, which is varied continually to furnish the proper mix. The gravel is pumped and screened to remove a portion of the fine aggregate before loading, but the disposal of surplus fine material is considered to be in excess of the extra cost of cement required.

The names of the contractors and contract prices for the different projects and sections are indicated in the accompanying table.

PAYMENT.

Federal aid has been granted on the sections awarded at the rate of $15,000 per mile. After deducting the amount of federal aid for each district the cost will be distributed 50 per cent to the county, 25 per cent against the townships in the benefit district in proportion to the land of the district in each, the remaining 25 per cent is charged to the property in the benefit district according to the benefits accruing.

DEPARTMENT OF AGRICULTURE TESTING BRICK ROADS.

The Bureau of Public Roads is making a study of the relative wearing qualities of the different types of pavements, and tests have been about completed on a section of pavement containing forty-nine different types subject to the wear of a special truck equipped with five large cast-iron disk-like wheels. The relative wearing qualities of hard as compared with soft brick are brought out very distinctly in this test. A chance to compare grout and asphalt fillers for both brick and stone block is furnished by this investigation. Likewise the relative wearing qualities of concrete when mixed with various kinds of coarse aggregates is indicated.

THE CALL FOR SALESMANSHIP.

American Face Brick and Face Brick Dealers' Association Building Up Sales Organization Work.

SINCE THE TERMINATION of the war until the present time most of the clay products of the country have practically sold themselves. The demand has been enough ahead of the supply that buyers were busily seeking the product instead of manufacturers seeking the market. Now, however, we are reaching the turn of the tide and the producers will have to get out and sell their product. This is really the best in the end; it is the thing which leads to progress and upbuilding, especially if the industry studies and makes use of constructive salesmanship. That is the thing we should seek to develop during the winter, new and worth while ideas in constructive salesmanship, because it is the thing which helps make big business and a better order of prosperity.

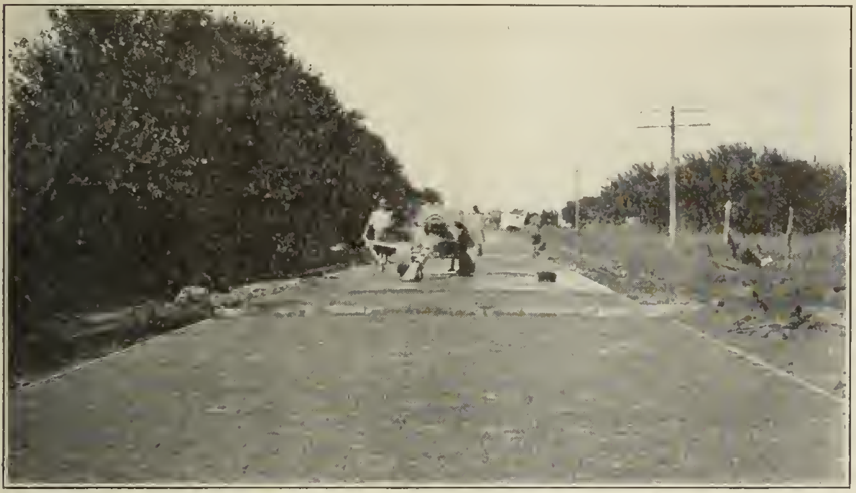
The American Face Brick and Face Brick Dealers' Associations are doing a splendid work in this connection. Realizing the great importance of a better understanding on the part of the dealers and their salesmen in carrying on their line of work in conjunction with the million dollar advertising campaign, the two organizations held a series of joint sales meetings, October 7, 12, 14 and 21, at which live topics were presented and discussed for the benefit of all face brick dealers and salesmen. The first meeting was that of the southern division held at Atlanta, Georgia, the second the Indiana-Illinois, Iowa and Northwest divisions at Chicago, the third, Ohio Red, Eastern Red and Buff Gray and Flashed divisions, Pittsburgh, Pa., and the last Kansas-Oklahoma and Southwestern divisions at Oklahoma City, Okla.

These meetings were all well attended, in many cases the manufacturers and dealers in these divisions bringing their entire force of salesmen.

Dr. G. C. Mars, director of the Service Department of the American Face Brick Association, was the principal speaker at all these meetings. He clearly explained the psychology back of the whole promotion plan and impressed upon the salesmen the importance of their connection with the industry, declaring that the salesman is the point of contact between the manufacturer and user; that they were in the front rank and on the firing line where their personality, reliability, integrity and knowledge of the business in general would be the real foundation for the good or bad impression the buying public is going to have of the business.

He spoke of salesmanship in general, detailed the general scheme of the selling campaign of the Eastman Kodak Co., and declared that the face brick manufacturers product was just as high class and therefore had to have just as high class an organization. He outlined selling campaigns and made suggestions in regard to strengthening the arguments of the Dealers and Salesmen.

The largest attendance was at the Chicago meeting, Hotel LaSalle, October 12th. Over three hundred were in attendance, representatives with their salesmen from Omaha, Minneapolis, Wisconsin, Milwaukee, Indianapolis, St. Paul and many points in Iowa, Illinois and Indiana. Eben Rogers, chairman of the Indiana-Illinois Division, presided. The morning session was given over to the discussion of salesmanship, many impromptu speeches being made while the afternoon session consisted for the most part of talks on the advertising campaign and cooperative effort in this connection.



Grouting Monolithic Brick Pavement

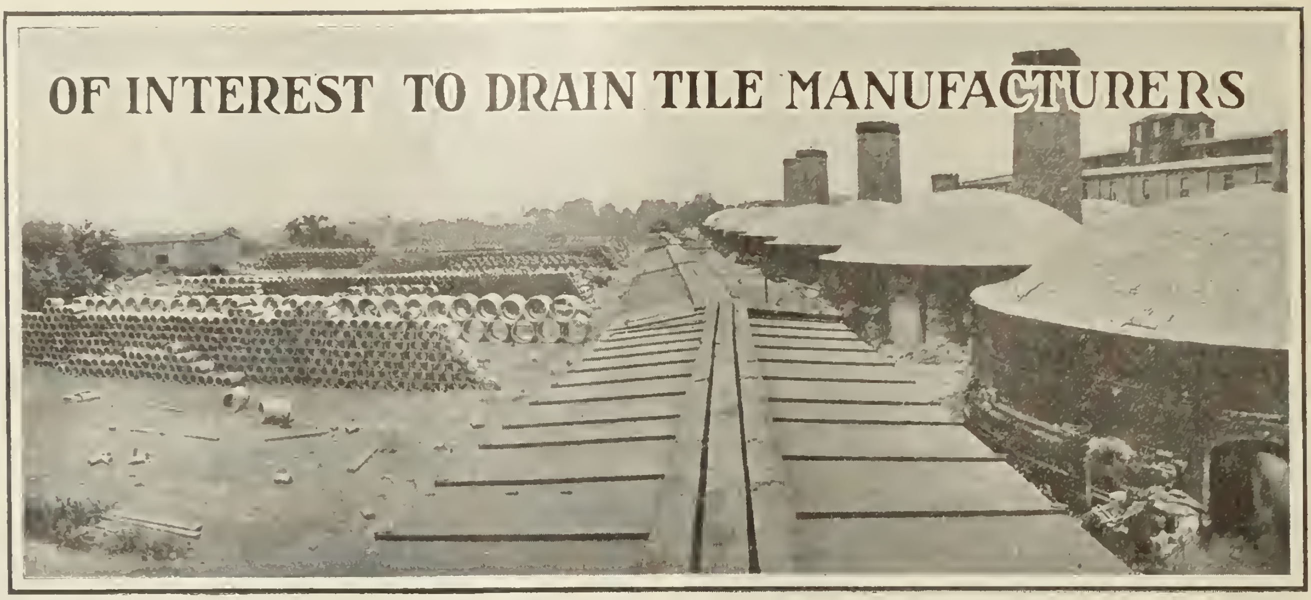
DEALERS' CONVENTIONS.

DURING THE WINTER season there will be many annual conventions of interest to building material branches of the clayworking industry aside from the conventions of the industry itself. There are, for example, many state and regional associations of retail dealers in lumber and building material which will be held in the next few months. These dealers are developing an interest in clay products which makes it more important than ever before that producers of brick, hollow building tile, drain tile and sewer pipe take steps to get in touch with this dealer trade through their conventions. A part of this work can be done through organizations in the clay industries, and some of these are now busily looking into this matter. Part of it, however, is an individual matter with men doing business in the territory represented by the conventions. These men should get in touch with the dealers' organization and make it a point to attend the conventions, get acquainted and develop a co-operative spirit for the making of their product.

FACE BRICK CONVENTION TO BE HELD AT FRENCH LICK SPRINGS, IND.

The American Face Brick Association, through its board of directors, has selected French Lick Springs, Ind., as the meeting place for their 1920 annual convention. The French Lick Springs Hotel will be headquarters as usual. The dates of the convention are Wednesday, Thursday and Friday, December 1st, 2nd and 3rd.

OF INTEREST TO DRAIN TILE MANUFACTURERS



Tile Drainage a Factor In The Control of Rivers.

Will Not the Subsurface Percolation Which Follows Drainage Result In Storage and Better Distribution of Runoff?

By Hyatt Frost.

HAT can we accomplish toward getting materially more of our annual precipitation into the lower subsoil stratum? A practicably constructive solution of this problem means much to most of our humid climate sections. Will systematic tile drainage in these regions of heavy rainfalls put more acre inches of water into the lower subsoil, that is, into the stratum below tile line? An affirmative answer to this question furnishes the major premise for the final conclusion reached in this article.

All the writers on soil physics and allied subjects agree that underdrainage is the most, or quite an, effective means of preventing soil erosion, because such drainage—not merely of wet soils, but of all the heavy clays—opens up the subsoil. This is largely brought about by deepened root growth and their resultant decay whereby additional millions of small and many large perpendicular drainage channels are formed in every acre. These channels increase in a progressive ratio as the system grows older. The result of ten or more years of such drainage is a new zone of honeycombed subsoil.

The introduction in comparatively recent years in American agriculture of the deeper rooting plants, particularly some of the tap rooted clovers, is quite materially helping in this direction. That this deeper rooting is many times intensified by the drainage there can be no doubt. Underdrainage not only quickly and early in the season better dries out the top soil, but rapidly lowers the top line of the upper subsoil water zone. It is a law of plant growth that where moisture is wanting in the top soil, more roots early in life set deeper for their moisture supply. Underdrainage drying out top soils and opening up subsoils inevitably must induce deeper rooting. On my own systems of underdrainage, erosion has materially decreased by reason thereof, and I am sure there is better drouth resistance. Not only have I observed decreased erosion, but decreased outlet flowage from year to year after three to five years' installation of the systems. In short, the older the system becomes the less it works—at its outlet. Observing drainage farmers note the same phenomena.

This has led to further investigations and deductions. I found that old timber-ditched and stone-drained tracts continued to care for the precipitation long after these drains had ceased to work at the outlets, and in some cases as effectually as before. I drained, in 1900, a tract that many springs for thirty years before, had become a bog till near May. This system had a very precarious outlet and I cared for it for five or six years but later owners allowed the outlet to become completely sealed. Still this tract took care of the March, 1913, flood of 9½ in. of rainfall and was ready for gardening in about three weeks, when before March rains of 3 and 4 in. rendered it wholly unfit for from four to six weeks. This tract is now built on and basements are not flooded as was the case near its upper end prior to the drainage. The only conclusion, after eliminating all possible doubt-creating factors, is that the subsoil was effectually and permanently opened up by a few years of underdrainage.

On theory alone we would logically conclude that if even but for a few hours there shall hang over a lower subsoil a zone of thoroughly saturated upper subsoil, gravitation would put more water below in large part to reach some subterranean reservoir. In short, when we find that a heavy zone of water gravitates through the top soil into the upper subsoil, independent of any augmenting factor such as increased root channels, logically we must conclude that more would get into the lower 3 to 5 ft. zone.

Of course, first impression would be that this augmented water supply in the upper subsoil would finally all gravitate transversely into the tile and thence be discharged at the

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outlet but when we actually find such is not the case, we are forced to the conclusion that the discharge shortage gets below the tile line.

Tile Drainage of Farm Land.

Tile drainage is developing wonderfully in Indiana and Ohio on the high, so-called dry, but heavy and even-rolling clays. All agree that the crops on these drained lands stand the droughts better. I have been thoroughly convinced of this by observations on my own systems. It can be accounted for in part by reason of the deepened foot-feeding zone, but when we find in a real drouth the soil is almost as dry as powder above the tile line, we then only can account for this successful drouth resistance by reason of an augmented moisture supply below the tile line. These premises alone would seem sufficient to justify the conclusion that there is thus created a zone of increased moisture supply below tile line.

Let us consider the well recognized effect of this decreased run-off on river-control in the way of flood prevention. Even should the soak-in merely be held back in a spongy subsoil, as must be the case for from one to five days, but still shortly finds its way into the streams, it would be about or quite as effective as retarding basins such as are being constructed in the trough of the Miami watershed to protect Dayton, Hamilton, and other cities. Then, too, it is merely an intensification of nature's way of preventing these holocausts. However, if tile drainage not only holds back an acre inch or two of precipitation for several days, but puts another acre inch or more into a subterranean zone, then its flood prevention function becomes indeed real.

Let us go to the other horn of our national dilemma—that of the constancy of our white coal supply and of improved river navigation throughout the year.

An old grist mill man explains that about 1875 his father's power supply began to fail, till for fifteen or more years prior to 1895 they were compelled to shut down each season for from four to six months by reason of water shortage; that his head of water. coincident with the extensive underdrainage installations in the watershed above him, began to return so that since about 1902 he, as successor to his father, has been vouchsafed a dependable water supply throughout the entire season. He long ago came to the conclusion that his augmented water supply was largely attributable to this tile drainage above his dam. "Why," he said to the writer in October, 1919, "you will not find a single tile now working but I am getting the increased water supply just the same and it must be because more water sinks below the tile and gradually feeds subterraneanly into the creek and its feeders above me throughout the season."

An examination of the stream, a few days later, above and below this dam and of one of its main feeders for several miles disclosed no drainage tile pouring in, but did disclose hundreds of seeps plainly visible at low water stage. The cold spots in the stream bottoms that we are always able to detect with bare feet in warm weather, and the weak springs and seeps that we can always find at low-water stage, are the main sources of dry-weather supply for all our streams. At the time of this examination, I found no water immediately below his crude and shallow, but effective, dam, but as I followed down the old stream bed, there was a slightly augmented supply at each ripple, plainly to be seen as coming from "seeps" only, till at a mile below his dam perhaps 5 cu. ft. in this creek had gathered up. A dam on White Water River each season except those of exceptional summer rainfall has for forty years, to my knowledge, demonstrated this same phenomenon, but in a much more intensified degree. In portions of at least two large feeders of White Water River, under my observation since the early eighties, there has certainly been shown some increased water supply in droughty seasons and I know this has come from cold spots that formerly did not remain constant, but that now do.

Thus, where there is extensive tile drainage in a given watershed and a decreasing annual flowage at the tile outlets and no flowage at all therefrom in the dry season and an increasingly better dry season stage in the watershed stream, and its feeders, by reason of these conditions one is forced to the conviction that gravitation water below the tile lines is in part correspondingly increased and that from all of this there must result lower flood stage and better dry weather supply. My final conclusion is that systematic underdrainage will, more than any economic human agency, effectively contribute to physical river control by keeping down floods and by keeping up power and navigation stage throughout the season, and that, too, in nature's own way.

As such drainage is being voluntarily practiced in humid sections in an increasing progression, it seems to me that there should be governmental fostering of this most kindly aid to nature, not only from a crop production and a soil conservation, but from a river-control, viewpoint.—Engineering News Record.

PHYSICAL EXAMINATION FOR WORKMEN.

One of the feature articles of the recent annual Safety Congress, at Milwaukee, stressed the importance of a rigid physical examination of workmen along the lines of army examinations. The argument advanced is that while in the past we hired men on the basis of education or skill, that today we realize that the physical condition is a great factor in the hiring and placing of men.

This is all true enough and a lot of good argument can be advanced in favor of it, but we must not forget that there are some exceptions, and also we must take into consideration the fact that the attitudes of the workmen would be against it. To some extent the natural resentment of an applicant for position to the invasion of his privacy in the way of physical examination may be overcome by educational propaganda. But it will take time and the propaganda should be directed to the workmen rather than to the employer himself. In other words, the teaching should lead workmen to voluntarily suggest physical fitness as a feature to be considered.

A man who arbitrarily undertakes to put into practice a scheme of this kind in hiring men is not only likely to stir up a hornet's nest, but he himself may be led astray because there are many men lacking in physical perfection who can and do render splendid service in many different capacities. In short, this is an academic theory which needs to be seasoned with a lot of good common sense and generous regard for the other fellow.

WESTINGHOUSE ISSUES ELECTRIC SHOVEL PUBLICATION.

The Westinghouse Electric & Manufacturing Company is distributing Motor Application Circular No. 7132, entitled "Electrification of Excavating Shovels," which describes and illustrates the various uses to which electric shovels may be put, such as railway work, coal mining, and dragline excavating. The method of electrifying is discussed, together with an outline of the choice of equipment. Advantages of electric shovels are fully considered and results of recent tests are given, which show the cost per cubic yard of material removed by means of these shovels. Tables are produced which show the approximate energy consumption of electric shovels and dragline excavators.

A copy of this bulletin will be sent to any interested party upon request for same.

THIRTY-FIFTH ANNUAL CONVENTION TO BE HELD IN NEW YORK CITY, JAN. 31 TO FEB. 5, 1921.

Common Brick Manufacturers' Association and the National Brick Manufacturers' Association to Meet for Second Time in Annual Convention

BACK TO BROADWAY is to be the slogan of the members of the N. B. M. A. and allied organizations during the months to come, for it has been decided to hold the thirty-fifth annual convention in New York City, January 31 to February 5, 1921, when there will be a joint meeting of the National Brick Manufacturers' Association and the Common Brick Manufacturers' Association at the Pennsylvania Hotel which will be headquarters during the meeting, and where the festivities incident to the annual gathering will occur.

Members of the parent organization will remember with pleasure the delightful week spent with Father Knickerbocker in March, 1917, when for the first time in its thirty-odd years of meandering the brick and tile manufacturers of the United States and Canada gathered in New York City. They learned at that time that the greatest city in the world is really a fine convention town, in spite of the many attractions that lead visitors to go sightseeing both day and night. Notwithstanding all this, the sessions of the convention were well attended and the social functions ditto.

With this in mind, we are glad to accept the invitation to play a return engagement to New York City and predict one of the largest gatherings of brick manufacturers in the history of the Association. The lure of the great White Way is universal; it appeals irresistibly to old and young, high and low, girls and boys, regardless of age, the youth and the matured mortal, each and every one finds in the world's vast hive of industry, the home of art in America, the great amusement center of the whole world, a never ending charm.

Broadway is more brilliant today than ever before and the avenues of pleasure to which it leads beckon to the members of the clay craft from all corners of the nation to come and enjoy a week of recreation intermingled with shop talk and an interchange of trade lore which will leave every participant better equipped for the ensuing year's business.

Pennsylvania Hotel Headquarters.

The famous Hotel Pennsylvania will be headquarters during the Convention. It is the world's largest hotel, but more important and interesting than that is that it is a great hotel of character and distinction, the New York home of many thousands of discriminating travelers who want the best the world's greatest city can provide, and they find it in the Hotel with a bath, and is directly opposite the New York terminal Pennsylvania. It has twenty-two hundred guest rooms, each of the Pennsylvania Railway system. In fact, it is connected with same by a subway, so visitors do not have to take the risk of crossing a busy thoroughfare, but instead may call a "red head" to lug the luggage and stroll leisurely to the spacious and beautiful lobby, where polite attendants will receive and show the way to the room in which will be found tuh or shower bath and fresh iced drinking water which flows at the touch of a button. In every bed room, whatever, its price there is a telephone, a built-in-wardrobe, provided with coat-hangers, a full-length mirror, an electric reading light attached to the head of the bed, and a portable electric light on the writing desk—besides the lamp over the dressing table mirror and a ceiling light. In the Pennsylvania a morning paper is slipped noiselessly under your door while you sleep—and there is no charge for it in your bill. Every room in the Pennsylvania is an outside room, with an abundance of window-light and air.

The rates at the Hotel Pennsylvania are very reasonable considering service and equipment. There is a rate card in every room, giving the price which ranges from $4.00 for a single room to $6.00 for a room for two, with double bed. If separate beds are preferred, the rate will be $7.50 and up according to location. Where three or four persons occupy a room together with single beds the rate will be $10.00 and $12.00 per day per room.

President Wm. K. Hammond.

One of the praiseworthy general features of this biggest hotel is the variety of accommodations from a luxurious suite of many rooms to a small single room. Also one may choose among many restaurants, and every facility is provided for entertaining in one's own sitting room, or in a private dining room.

The Pennsylvania is located conveniently to the shopping districts and the theatre districts, and the business district are easily reached by subway, which has a station in the hotel. Bus lines and surface cars pass the door and the elevated railway is but a block away.

The Pennsylvania is as nearly absolutely fire-proof as a building can be, being built of brick and tile, metal and stone,

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Remember==The Biggest City, the Biggest Hotel,

with wood eliminated to an extent which would have been impossible a few years ago.

The Common Brick Manufacturers' Association will meet jointly with the N. B. M. A., as will also the National Clay Machinery Association. Local sections of the American Ceramic Society, the common, face and paving brick manufacturers and manufacturers of sewer pipe, hollow tile and terra cotta are invited to participate, thus insuring a representative gathering of clay products manufacturers.

Those desiring further information as to requisite of membership in the National Brick Manufacturers' Association, or any other detail of convention arrangements, are requested to communicate with the Secretary at Indianapolis.

THE EXECUTIVE COMMITTEE,
Wm. K. Hammond, President.
Theo. A. Randall, Secretary.

ALBERT V. BLEININGER LEAVES BUREAU OF STANDARDS.

ALBERT V. BLEININGER, who for so many years has been one of the foremost factors in the experimental work of the Bureau of Standards, and who has given to the clay industry a service which can hardly be duplicated by any other scientist, resigned from the Bureau, October 9th, to take up a position with the Homer Laughlin China Company, East Liverpool, Ohio.

Albert V. Bleininger.

In a recent communication to The Clayworker he stated that it was with great reluctance that he gave up his Governmental position for he considered his activities there his life work. He was very fond of his associations formed through the Bureau and particularly was he attached to Dr. Stratton, looking on him as one of the great men of the Government and considering it a rare privilege to work under his leadership.

Dr. Bleininger is to take charge of a control and research laboratory at the Newell plant of the Homer-Laughlin China Co. He informs us he has not taken the position vacated by Mr. Poole, as was erroneously given in an unauthorized statement in another magazine, nor is he to be manager of any kind of a manufacturing plant. His great field is in the research department of the business. He will continue with the Bureau in an advisory capacity and no doubt will wish to return to this work when living conditions have changed from the present, or the law permits the taking on of outside work. At present the Bureau of Standards is not in a position to give a salary adequate to the needs of a scientist and his family living in the environs of the Nation's capitol.

The successor to A. V. Bleininger will not be decided until after the return of Doctor Stratton who is at present in Europe and not expected to return until late in October.

The Homer-Laughlin China Co. is to be congratulated on securing the services of such an able man.

AFTER MANY YEARS ON THE ROAD CLAY MACHINERY MAN GOES INTO BUSINESS FOR HIMSELF.

AFTER TEN years with the Arnold-Creager Co., of New London, Ohio, manufacturers of soft mud brick machinery, Frank McClellan, one of the best known clayworking machinery "missionaries," has tendered his resignation to take effect November 1st. Mr. McClellan has been connected with the clayworking business for thirty-four years, and twenty-three years of that time has been spent on the road representing one or another of the leading clay machinery firms, and he is now shaking the dust of the road from his feet, so to speak, and will locate permanently in Cleveland, Ohio, handling new and second hand machinery and supplies. Mr. McClellan's knowledge of the various makes of machinery and of clayworking in general will be a big asset in launching the new enterprise. His legion of friends all over the country will join in wishing him success in his new venture.

DEATH OF MRS. WALTER S. DICKEY.

Mrs. Kate L. Dickey, wife of Walter S. Dickey, president of the Dickey Clay Manufacturing Company, died recently at her home in Kansas City, Mo., following an illness of more than a year, preceded by an operation from the effects of which she never recovered. Mrs. Dickey was 58 years old.

Mrs. Dickey was actively engaged in church, musical and literary endeavors. She was a member of the Central Presbyterian Church, a member of the board of directors of Mercy hospital and of the Visiting Nurses' Association. She was a leader in Y. W. C. A. and Red Cross work and personally superintended drives in the city up to the time of her illness. She was also a member of the Country Club, Blue Hills Club and the Comedy Club.

She is survived by her husband, two daughters, Miss Catherine Dickey and Miss Madeline Dickey; two sons, Laurence Dickey and Kenneth McM. Dickey, all of Kansas City.

SOUTHERN BRICK MANUFACTURERS ORGANIZE.

Combining the old organizations of Eastern and Southern Carolina, the North and South Carolina Brick Manufacturers' Association was organized last month. Roger Moore, of Wilmington, was elected president and Lincoln S. Morrison, of Florence, S. C., secretary and treasurer.

The Biggest Convention, the Biggest Time Ever.

THE CLAY-WORKER

Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

Title registered, contents copyrighted.
THIRTY-SEVENTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " "	10.00
Ten copies, " "	15.00

Foreign subscriptions 65 cents additional.

☞Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
226 East Ohio St. T. A. RANDALL & CO. [Inc.], Indianapolis.

Vol. 74 October, 1920 No. 4.

CURRENT COMMENT.

It's a melancholy day for the high-price-iteers.

* * *

The doctrine of home owning is the best answer to the housing problem.

* * *

Builders are now doing the "hesitation," in the hope of lower cost by spring.

* * *

There is some decline in arrogance and some increase in the efficiency of labor, and there is room for some more.

* * *

In the main the clayworking industry has always stood strong for the open shop, and we hope it will continue to do so.

* * *

It now looks as if a good thing to do with the surplus earnings of this year is to put it into made-up stock for the spring demand.

* * *

This is the season for prompt action in handling current business so that bad weather may not catch you with unfilled orders on hand.

* * *

It is a good time to make a careful survey of your costs, that you may know just where you are at, and where you may trim them down a little.

* * *

New machinery and equipment will probably be more readily obtainable this winter than last, but at that you should get at your changes and alterations early, so that you may have them completed in time for the busy season.

* * *

Plan books are a great agency for awakening and shaping the desire for home building, and the industry should keep this agency working actively through the winter months. It will help mature plans for spring building.

* * *

Among the orders of the day should be one looking to proper raw material storage for winter running.

* * *

The high cost of brick laying is one of the hills on the road to progress that needs a bit of grading down.

* * *

Among the good items of news coming in is one that says the railroads are now furnishing more transportation service.

* * *

That seesaw of high wages and high prices is beginning to weigh down now and the general public breathes easier as a result.

* * *

The bigger the business the more need there is for system and the more danger there is of entangling red tape unless the system idea is intelligently handled.

* * *

One of the good signs of the times is that in the magazines and periodicals showing house pictures and plans there is now noticeable a greater percentage of walls made of brick.

* * *

Generally the brick man who takes pride in his business strives to set a higher standard for his product each year and to live up to it. That is why the brick industry has made wonderful progress in this country.

* * *

One reason assigned for the "tightness" of money is that too many people are carrying too much of it around in their pockets. The idea is, you should put the pocket roll in the bank to help keep the wheels of industry rolling.

* * *

We are beginning to realize now that the big solutions of the housing problems have failed to solve it. Almost invariably big housing schemes defeat themselves by the cost involved, and the final solution is found through awakening of individual effort.

* * *

How to train foremen is a subject of interesting discussion these days, and as our contribution to it we rise to remark, first catch your foreman. The first and most important thing is that of selecting those men best qualified by nature for foremanship.

FEATURING MR. UPKEEP.

The common brick folks are doing good advertising work in featuring Mr. Upkeep as a factor in ultimate building cost. Repairs, painting and upkeep on wooden buildings constitute an item in maintenance cost which in a few years makes the brick home more economical, even though the first cost comes a little higher. Permanence and freedom from upkeep cost are strong arguments in favor of brick and other clay products in preference to less durable material.

CONCENTRATING POWER.

People are now putting on paper some big visions of power concentration for the sake of economy in fuel and greater industrial efficiency. One recently pictured idea is that of a great power transmission line from Boston to Washington with power produced by water and by steam plants at the mouth of mines to supply both the industrial and railway needs of a great eastern zone within reach of such a line. This may read like a pipe dream now, but there is so much good logic in it that visions of this kind will likely lead in the next few years to the actual development of plans for tremendous concentration of power-producing units at the mines where coal is used to supply the power needs of both the railroads and industries in a great stretch of surrounding territory. The realizing of this vision will probably do more than anything else to solve the transportation problem by eliminating immense quantities of industrial coal tonnage and railway coal, and it should result in reducing power cost for industry and simplifying its application.

THE RISE OF RESEARCH WORK.

There has been a fair share of research work in the clay working industry for a quarter of a century, more or less. All the time, however, there has admittedly been room for more, and now there is inspiration to greater effort here, which comes from the general rise in research work the country over, started during the war period, and which has been reflected in the great showings of the chemical industries. We are told that there is ten times the activity in research work today than there was three years ago, and there are probably ten thousand scientists in the country busily at work all the time in research.

Research is the base of progress, the more of it we have in any individual industry the more rapidly that industry makes progress, and the more the idea spreads to other industries the more rapidly the country as a whole makes progress.

The clayworking industry is a peculiarly fertile ground for research work, and now that the research idea is in the air all around us industry should gain therefrom fresh enthusiasm and push the research branch, both individually and collectively, through organizations, to the end that the industry may make both material and scientific progress in keeping with the spirit of the times.

PRICES SEEKING A LEVEL.

It is not easy to prophesy just where we are going or to point out just where we will land, but we are now on the way in the matter of price readjustment, and all around people in every line of industry and commerce are seeking for a price level on some stable base or foundation. It became evident a while back that we had passed the peak period, and little breaks were made here and there, then came the Ford Motor Company with an announcement of prewar prices, followed by cuts in other automobile industries, and many other breaks have been noticeable in other lines all around. This has included some trimming down of brick prices here and there, and that of some other offerings in building material.

There is a general feeling that when prices of the principal articles of commerce are brought down to logical stable basis business conditions will be better and the country will prosper more. The present trouble is in the fact that with prices showing a declining tendency there is an inclination on the part of buyers everywhere to hold off until the lowest possible level is reached. This at the present time is serving to retard building operations as well as to restrict merchandise buying. All this in turn tends to further depress prices and to make a sort of vicious circle which may lead to industrial depression and slow business unless we can bring good reasoning to bear which will furnish a logical base level to prices that will be easily recognized by the buying public as well as the producers.

In the clayworking industry the cost is the main basis of selling prices, and the big items in cost are fuel and labor. There is some indication that fuel prices may become easier before the end of the year, but so far as labor is concerned the main chance for economy here is in labor saving machinery and management rather than in reduced wages.

It is time for clayworkers to turn special attention to cost as a basis for stabilizing price levels. It is fairly easy to determine actual costs as they are today, but the big problem, the thing to give attention to, is the item of cost as it may be six months from now, because we are going to need that firm foundation of cost for a stabilizing ground for skidding prices.

THE BUILDING OUTLOOK.

As the fall building season comes to a close the most noticeable activity in building is for industrial purposes in the form of plant enlargements, new warehouses, new industries, etc. Home building is held in check some by declining price tendencies and a manifest intention on the part of many to wait until material prices have hit bottom. Speculative building is held in check for the same reason, and for the further reason that money is not readily obtainable for financing such undertakings. The indications are that considerable progress will be made during the winter in the way of providing finances for home building, and that the winter and early spring will see many plans mature for homes. Meantime the favorable feature of the outlook for clay products is in the wide disposition to look carefully into building material and to build for permanence and greater fire protection, which logically means a using of more brick and hollow building tile for what building is done.

INVENTORY AND APPRAISAL.

It used to be that plant inventory based upon original cost of installation of equipment constituted the ground work of valuation. There entered some factors of depreciation, but it took the war period with the increase in values following to shake us out of this idea and put us on a proper basis of appraisal of plants and equipment each year for two good reasons. One to have a base for interest on investment, and the other to determine actual values which are necessary in making out profit tax returns. Now there is a pretty wide recognition of the fact that the only proper way to value a plant and its equipment is through appraisal based largely on present cost and values, and taking into consideration the conditions of plant and equipment. Among the larger institutions part of the clerical force is delegated to do this appraisal work, while among others there is a turning to recognized appraisal concerns who make a business of it. This is a matter for plant owners to be thinking about and preparing for these days, because in striking a balance at the end of a year it is important to have a proper plant appraisal made in such a manner that it can be substantiated and be accepted as a base for figuring profits and income taxes.

LABOR TURNOVER.

Some interesting facts have been brought to light by a recent investigation of the Merchants' Association of New York on labor turnover and its cost. This investigation shows that the average yearly rate of labor shift or turnover in 1920 for skilled and semi-skilled factory workers in New York was 125 per cent and for unskilled factory workers 265 per cent.

This percentage is perhaps higher than usual because of the degree of unrest now and the efforts to re-adjust industry. It will probably settle down, however, to from 75 to 100 per cent for skilled and semi-skilled and probably 200 per cent in unskilled. Now since they figure that it costs from $10 for unskilled to $250 for highly skilled workers to make a change and train a new man it is easily evident that job changing is an expensive business for industry.

It is said that a fair range for semi-skilled employes is a cost of $50 for each change or turnover. Multiply this by the number of employes in a plant and you can easily get a startling reminder that it costs money for men to change jobs and to train in new men, especially for skilled work. There is found in this connection one of the best arguments for bonus paying to those who continue in service throughout the year.

Surely if it costs $50 to break in a new man one can afford to pay a good worker a $50 bonus at the end of the year for sticking to his job throughout the year.

THE BOOK OF SMILES.

THE CURRENT BOOK OF SMILES is a "You tell 'em" edition and being up-to-date, dabbles in politics slightly, declaring that "The candidate who wins will be the one conducting his campaign from his front cellar." It also quotes from some of our star orators of the Senate, one of which we commend to Master John Sibley. It runs, "Ed Showers, of Bloomington, Ind., who is as well known as his wonderful organization, has a great election story. Of course, it hinges on the League of Nations. A colored vote-seeker was, in his own opinion, very learned on that issue. Calling at the home of a newly enfranchised suffragette, he sprung it first thing. "May ah inquiah does you all b'lieve in a man-date?" "G'wan, man," answered Orphelia Mobile Jefferson, demurely, "fust yo' git an introduction wid me, and den mebbe ah'll 'low yo' to make one wid me fo' de movies." We suggest the wise thing for the brick and tile men to do is to make a dryer man-date with the Standard Dry Kiln Company, or at least get their catalogue and data book relative to up-to-date brick dryers and their equipment. See ad on page 318.

SPECIFICATION OF THE NATIONAL PAVING BRICK MANUFACTURERS ASSOCIATION.

Without doubt the finest booklet ever published by the National Paving Brick Manufacturers' Association is that just recently issued covering specifications for city streets and country highways. It covers in detail with handsome illustrations subgrade, materials, longitudinal expansion cushion, curbing, artificial base, bedding, vitrified paving brick and joint fillers.

So complete and well arranged are these specifications that it will prove invaluable to engineers and contractors in this particular work. As is stated in the introduction:

"The chief object sought by this form of preparation and presentation is definitely to call attention to the variety of construction methods and materials that should be studied and may be drawn upon before a type of brick pavement for any single improvement project, or portion of project, is selected."

Anyone desiring copies of these Specifications should write the National Paving Brick Manufacturers' Association, 830 Engineers Bldg., Cleveland, Ohio.

BRICK PLANT EQUIPMENT.

The Lancaster Iron Works, Lancaster, Pa., has issued a new bulletin on brick plant equipment for soft mud brick and fire brick plants. It gives detailed information of particular interest to manufacturers of these lines, including specifications for the brick plant, instructions for manufacturing brick by the soft mud process, with suggestions as to handling the clay, soak pits, molding, drying, and burning. The bulletins is illustrated with the various products of the Martin shops, including barrows, sand boxes, brick molds, brick machine, etc. A copy may be had for the asking, and will prove of more than ordinary interest to any one now engaged in or contemplating the manufacture of brick by the soft mud process.

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CONVEYOR PROBLEMS AND THEIR SOLUTION.

The above is the title of the latest catalogue of the Main Belting Company, Philadelphia, Pa. It is a "practical consideration of accepted conveying practice as developed by engineers of authority, and is illustrated by notable examples of scientific belt conveying, equipment, Leviathan-Anaconda belts, Main Belting flat and troughing rollers." It is handsomely illustrated. It gives very complete information regarding the use and installation of belt conveyors in general. Dimensions, weights and price list of the various types of rollers are given as well as capacities of belt conveyors. Weights of materials and advisable belt speed, belt conveyor data, horse power required to run belt conveyors empty or to convey material horizontally or to elevate material. A free copy of this interesting bulletin will be mailed you by the Main Belting Company, Philadelphia, Pa., upon request.

A SPLENDID BULLETIN ON ERIE STEAM SHOVELS.

The latest bulletin issued by the Ball Engine Company, Erie, Pa., on their Type "B" Erie Shovels, contains valuable information for anyone who is using or contemplating using shovels for winning their raw material. It details the important facts in the use and the economical operation of their shovel in street and road grading, rock work, cellar excavation, locomotive crane service, trench digging, etc. The text of the bulletin is practical and informative rather than laudatory, giving a general description of the Type "B" shovel while at the same time going into fairly complete detail. A copy of this bulletin will be sent to any interested party upon request. See the Ball Engine Company's ad on page 311.

SIL-O-CEL Insulation

prevents heat losses from crowns and walls of kilns boilers and all types of heated equipment.

Write for Bulletin F54 describing its advantages and, application.

CELITE PRODUCTS COMPANY

New York
Philadelphia
Pittsburgh

Cleveland
Detroit
Chicago

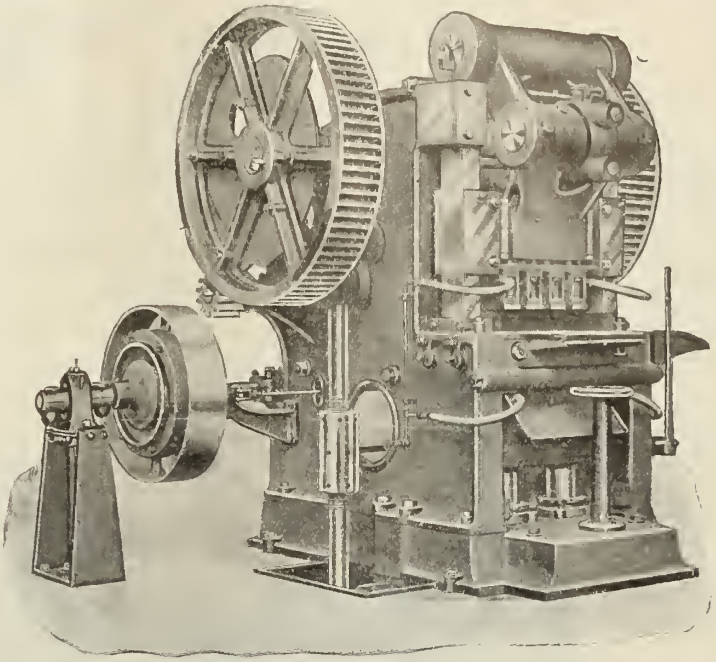
St. Louis
Los Angeles
San Francisco

American Model "C" Press

This is an unusually well built press. Heavy side frames are mounted on a massive bed plate. Parts subject to strain are steel. Power strain distributed. Large toggle, charger and crank shafts. Long bearings. Ample gears. Steel forged side bars. Dwelling pressure. Charger adjustment. Removable mold liners.

A press for perfect production with minimum cost of operation.

Get the Model "C" Bulletin.



AMERICAN MODEL "C" PRESS.

American 10=D Crusher

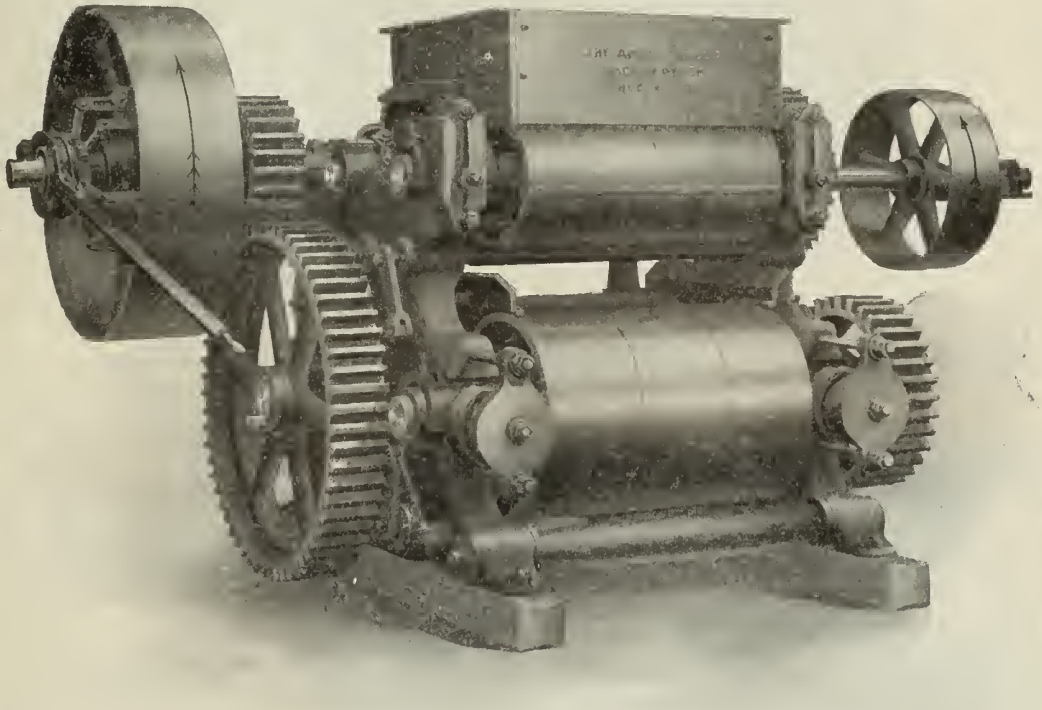
A crusher that will satisfy.

Built well and Runs well.

Designed for Service.

Built for Service, And gives Service.

Get Bulletin on the 10-D Crusher for full description.



AMERICAN 10=D CRUSHER.

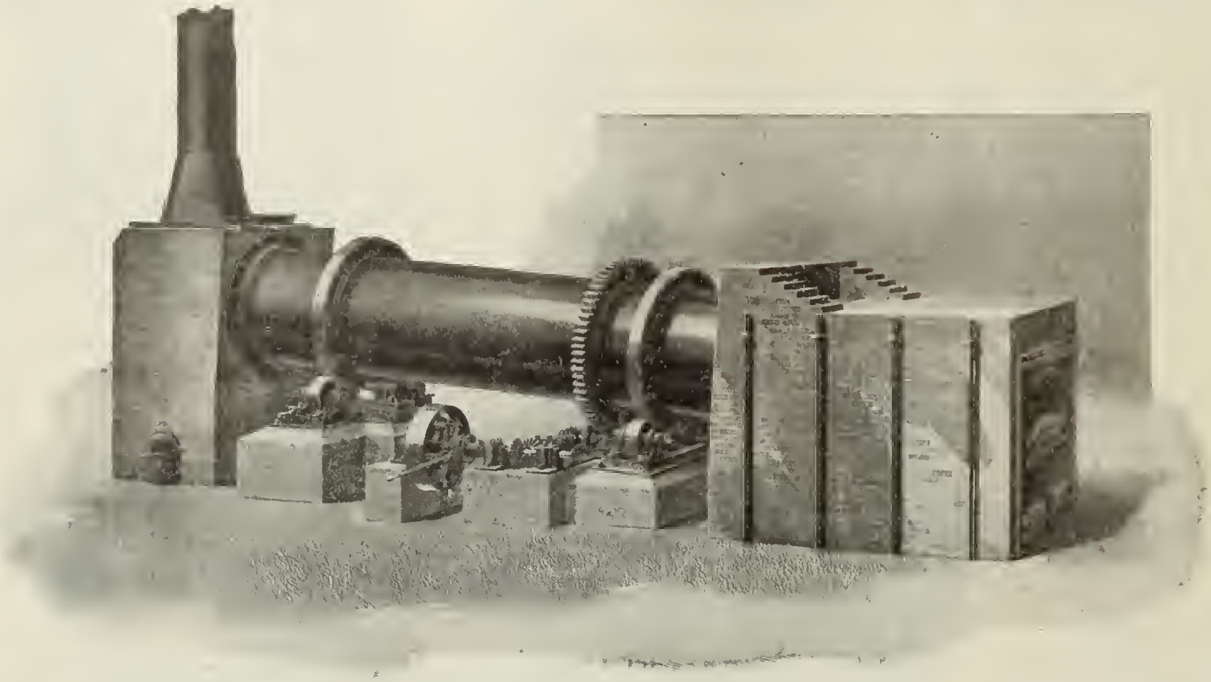
The Hadfield-Penfield Steel Company

Bucyrus, Ohio, U. S. A.

Formerly The American Clay Machinery Co.

American Rotary Dryers

In the clay and shale plants the direct heat Rotary Dryer is recognized as superior to prepare the material for the pans. Dryers of this type are also used in other branches of industry. In drying clay these dryers afford a positive means of maintaining the regular daily capacity of the pans without regard to weather conditions. They are "pace makers" and are easily one of the most valuable units of the entire equipment of the plant. Get our Bulletin on Rotary Dryers.



AMERICAN ROTARY DRYERS

American No. 68 Dump Car.

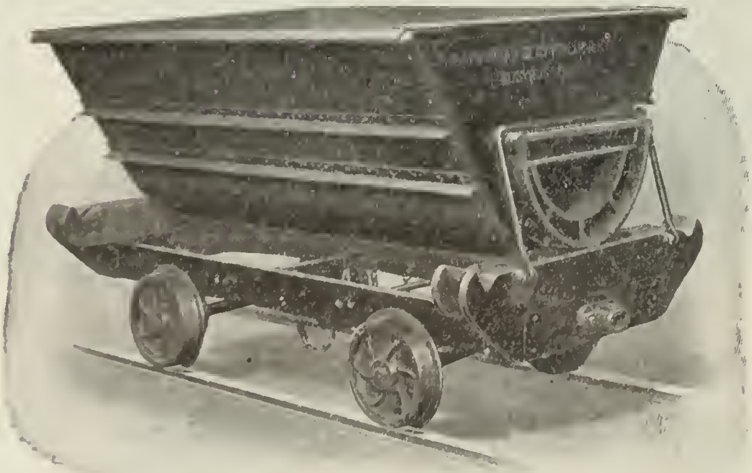
This is a well built rough service car. It has steel "I" beam side frames with heavy cast rocker base. The dump has a simple latch and the design insures a clean dump.

This car is built in several sizes. Get the No. 68 Bulletin for description.

The Hadfield-Penfield Steel Co.

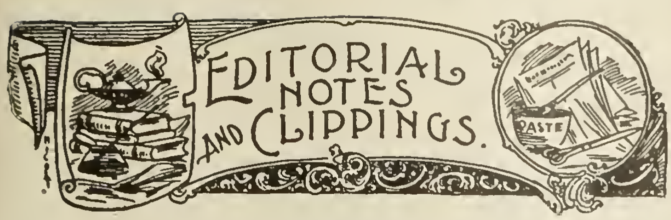
Bucyrus, Ohio, U. S. A.

Formerly The American Clay Machinery Co.



AMERICAN NO. 68 DUMP CAR

BUILT RIGHT RUN RIGHT



EDITORIAL NOTES AND CLIPPINGS.

The Redden Engineering Co., Sumter, S. C., is in the market for brick machinery and supplies.

The Salveson Face Brick Co., of Petersburg, Ill., recently increased its capital stock from $60,000 to $120,000.

The Tornay Coal Company, of Louisa, Ky., has announced that it will install a plant for the manufacture of fire brick.

The Chesterfield Brick Co., of Chesterfield, S. C., has been incorporated with $25,000 capital stock, by J. W. and R. S. Moore.

C. E. Stafford, of Ashland, Ky., is at the head of a company which has been incorporated to erect a brick and tile manufacturing plant at Torchlight, Ky.

The Hickory Grove Brick Company, of Charlotte, N. C., has recently been incorporated with $50,000 capital stock. Edwin L. and Raymond A. Jones and C. H. Clark are interested.

The Wheatley Pottery Co., of Cincinnati, are contemplating the building of a large addition to their plant and will start building as soon as the prices of building materials have adjusted.

The Builders Brick Company, of Seattle, Wash., recently let the contract for the erection of a 150-foot brick stack at their South Ninth Avenue plant. The stack will be erected of the Custodis radial brick.

The Starkville Brick & Tile Co. has been organized at Starkville, Miss., with A. W. Reynolds president, and Ed Robinson secretary-treasurer. A plant of 40,000 daily capacity will be erected at once.

H. R. Boswell, People's National Bank, Charlottesville, Va., is interested in a proposition to manufacture brick in that locality and would like to get in touch with manufacturers of brick and tile machinery and supplies.

The South Webster Brick Co., Chillicothe, Ohio, has been incorporated with a capitalization of $250,000 by B. C. Posten, F. J. Prout, J. D. Withgott and W. V. Swartzburgh. It will take over the property of the Webster Brick Co., of Scioto County.

A. B. C. Dirning of Fitzgerald, Ga., has purchased the roofing-tile plant of the Ludowici-Celadon Co., at Ludowici, Ga., and will remodel same, installing brick and tile machinery with a view of turning out 60,000 building brick per day and 50 tons of hollow building tile.

The Madisonville Drain Tile Co., of Madisonville, Ky., of which J. D. Bobbitt is secretary-treasurer, is making a number of improvements in the plant, including the enlargement of their dryer, and the construction of a fire proof building, installation of dryer cars and machinery, etc., for the purpose of manufacturing of hollow building tile in addition to drain tile.

The Union Brick and Building Company is the name of the new incorporation which will take over the property of the old Kaysville Brick company located at Kaysville, Utah. The new company will commence operations soon and it is reported that a long run will be made on hollow tile and brick for the Ogden arsenal, where several million brick and tile will be required for the new buildings. Governor Bamberger is interested in the new company.

Mr. Franklin Wolff, of the Monument Pottery Co., Trenton, N. J., announces the invention of a new sagger making machine which has ben thoroughly tried out in his plant and has worked very advantageously. The machine produces a clay ribbon of the desired length for the class of sagger in use, and the clay is mixed in a continuous operation in a small mill and then forced out of the compressor on a table. After the ribbon of clay has been run out on this table for the length as set, a simple system of rolling conveyors is used for the delivery to the assembler. The operation of the machine is almost entirely automatic. Mr. Wolff claims this machine to be a world beater.

The Winkle Terra Cotta Co., St. Louis, Mo., is rebuilding that part of its plant destroyed by fire in August.

The Hollingsworth Brick Co., of Athens, Ga., will improve their plant, with a view of increasing the capacity.

The Ashland Fire Brick Company, of Ashland, Ky., has certified to an increase of capital stock from $400,000 to $1,000,000.

The Danville Brick Company's plant at Danville, Ill., which has been closed several months as a result of a fire, resumed operations the first of the month.

The Chamber of Commerce of Sheboygan, Mich., is much interested in a proposition to establish a brick and tile plant at that point. The secretary can give full particulars.

The McKnight Fire Brick Company plant of Porterville, Cal., will be remodeled and enlarged. New machinery will be installed, and the plant modernized in every particular.

Phillip T. Muller, 1012 N. Oregon St., El Paso, Texas, is interested in a project to manufacture adobe brick, and would like to get in touch with manufacturers of brick machinery.

Fire of an unknown origin recently caused damage amounting to $250 to the plant of the Donahoe & Nolan Brick Company, Trenton, N. J. The plant has been idle for some little time.

John A. Reagan, manager of the new Johnson City (Tenn.) Brick Corporation, reports that he is making very satisfactory progress with the new plant and hopes to be turning out brick by the first of December.

The Brownson Brick Company, of Brownson, Fla., has been organized with W. P. Brownson, of Moline, Fla., as president. They will at once erect a plant which will be modern in every particular, including the Boss system of drying and burning. The plant when completed will have a daily capacity of 35,000 brick.

The Onondaga Pottery Co., of Syracuse, New York, is adding several new machines to their plant among which are large chaser mills and ball mill for the grind and pulverizing of their flint spar. These people are one of the first people who have installed their own flint and spar grinding plant.

The Watsontown (Pa.) Brick company finding itself cramped for office room has commenced the erection of a two-story brick building which promises to be one of the most handsome structures of the town, to be appointed with every convenience for the comfort of the office force and patrons. The whole building will be occupied by the company, which will concentrate the business of the local plant and the Paxtonville plant.

The old Standard Fire Clay Company at Empire, Ohio, is soon to be put in operation again, after a period of several years, the structure having been partially destroyed by fire about ten years ago. The plant was recently purchased by E. T. Castner, of Steubenville, who has had new buildings erected with new modern machinery installed, and in the future the plant will manufacture brick and tile exclusively. It will employ from 50 to 100 men and will be known as the Empire Fire Clay Company. It is expected that the plant will be in full operation some time this month.

The Glen Gery Shale Brick Co., with head offices at Reading, Pa.. announces that it has purchased the plant and property of the Reading Shale Brick Co. The latter is located in Wyomissing immediately adjoining the Wyomissing plant of the Glen Gery Co. The price paid for the property was $105,000. The property consists of a modern brick manufacturing plant and appurtenances and about seven acres of ground. The equipment is thoroughly modern and is operated by electricity. The plant has eight kilns and a capacity of 40,000 bricks per day. The acquisition of the plant of the Reading Shale Brick Co. gives the Glen Gery Co. three plants, the two at Wyomissing and one at Shoemakersville. The combined capacity of the three plants will be 200,000 bricks per day. The Reading Shale plant will be used by its new owners for manufacturing face bricks. At Shoemakersville Harvard, rug, street paving and sewer bricks are now being made. The Wyomissing plant is used for manufacturing the common hard brick used for ordinary building purposes. With three plants the Glen Gery Co. is prepared to serve the market with any type of brick needed.

The office building of the Glen Gery Shale Brick Co., at Shoemakersville, Pa., was completely destroyed by fire September 25th. The loss is estimated at $4,000.

M. H. and R. Milton Copenhaver have purchased the brick plant at Bristol, Va., and will completely overhaul same, installing new machinery and bringing it up to date.

William Donovan, who has been superintendent of the Harwalk Brick Co., has been removed to Clayton, Pa., where he will have charge of one of the Harwalk Co. plants.

The new plant of the Brinkley Brick Company at Coleman, Texas, is now in full operation turning out 35,000 brick per day. The prospects for the company are very good.

Lewis Glaser, Secretary-treasurer of the Bankers' National Life Insurance Company, Orangeburg, S. C., is interested in a movement to manufacture brick and other clay products at that place.

The Howard H. Stafford Clay Products Co., of Augusta, Ga., has purchased the brick plant at Society Hill, S. C., and will make a number of improvements in same. The plant has a daily capacity of 100,000 brick and 150 tons of building tile per day.

The School of Industrial Arts, Trenton, N. J., is arranging for the coming season to conduct a ceramic course. It is understood from Mr. F. F. Fredericks, director of the school, that this course is to be designed especially for the young men of Trenton who are employed in local potteries. This school has recently added some new modern machinery to its equipment and should be in a position to be of great service to the local potters.

The resumption of work by the sewer pipe plant of the Urichsville Clay Company at Urichsville, affording work to 75 on the first payroll, closes the gaps in the clay industry with the exception of one plant that is temporarily idle. The idle plant is in the Urichsville district and work at this plant will be resumed soon, it is said. The Urichsville plant was down several months for repairs. New machinery was installed and the works is aiming for greater output than ever. Labor troubles have not been responsible for any shutdowns. The car shortage continues but plants are expecting larger car allotments soon.

J. H. Spear, founder of the Washington Brick, Lime and Sewer Pipe Company and for 33 years a resident of Spokane, Wash., died October 4 at his home at Oakland, Cal., following an attack of heart trouble. Mr. Spear was for many years prominent in industrial and business activities in Spokane. He went there in 1887 from Chicago, founding the Washington Brick and Lime Company. He was the sole owner until 1909, when the company enlarged, three factories being maintained, a sewer pipe plant at Spear, brick kiln at Freeman and terra cotta plant at Clayton. Mr. Spear assumed the presidency of the company and this position he held up to the spring of 1919, when he sold his holdings. Mr. Spear was born in Springfield, Ill., and was 69 years old. He is survived by his widow, three sons and one daughter.

Although there has been no noticeable increase in production, which is still below normal, reports from the pottery district indicate 1921 should be a prosperous year for the employes as well as plant owners. Orders continue to pour in while the number of buyers visiting the market is increasing. In the meantime back orders are piling up. Manufacturers have been warned that the gas supply is dwindling and it is likely that it will be curtailed to industrial plants this winter. Prior to a wage conference between representatives of the Sanitary Pottery Manufacturers' Association and the National Brotherhood of Operative Potters at Atlantic City, October 13, delegates of the U. S. Potters' Association and the Brotherhood will confer on a proposed old age pension plan for pottery workers. John M. Grafton has accepted the management of the manufacturing end of the Ohio China Company's plant at Zanesville, O.

The large Victory Theater and Hotel Sonntag that is being erected at the corner of Main and Sixth streets in Evansville is being rapidly constructed and will be completed and ready for occupancy by the first of next June. The structure is being built of brick. This is by far the largest job that was started in Evansville during the present year and the building permit placed the value of the building at more than one-half million dollars. Another large theater has been planned for Evansville to be known as the New Vendome theater and it will be located at the corner of Sycamore and Third streets, and it is expected that construction work will be started within a few months.

NEW YORK MAN NOW AT LOS ANGELES.

Mr. P. A. Boeck, Manager of Distribution of the Celite Products Company, 11 Broadway, New York City, is now located at the company's Los Angeles office where he supervises the production work. Mr. Thos. G. Lee, Jr. will act as General Sales Manager with headquarters in New York.

BRICK MANUFACTURERS IN INDUSTRIAL EXPOSITION.

The second annual Evansville Exposition was held at Cook's Park in that city from October 4th to October 16th and attracted large crowds from southern Indiana, southern Illinois and western and northern Kentucky. The Standard Brick Maufacturing Company and many of the other live cocerns of that city had large exhibits at the exposition this year the same as they did last year. Large buildings and booths were erected at Cooks' Park for exposition purposes and they were built to last for several years to come, and it is proposed to make the exposition an annual event.

ALUMINOUS AND SILICEOUS BOND CLAYS INVESTIGATED BY BUREAU OF STANDARDS.

During the war the making of glass pots, crucibles and various other special refractories was seriously interfered with, owing to the lack of certain clays formerly imported from Germany, particularly plastic bond clays known as gross almerode. The Bureau of Standards conducted an investigation with the object of finding an American clay or combination of clays which could be used as a substitute for the German material. It was found that a mixture of three parts of Arkansas kaolin and one part of No. 4 Kentucky ball clay formed a satisfactory substitute for the gross almerode clay, and this combination was used extensively during the war. This investigation is now being extended and will soon be completed. Sixty small pots have been made and will be subjected to the corrosive action of various kinds of glasses. It has been found that when used with fifty per cent grog and Arkansas kaolin it has even a lower shrinkage and higher porosity than the German clay. These, the bureau announces, are very valuable properties for clays to be used in the making of glass-house refractories, and present indications are that this clay will be extremely important for this particular purpose.

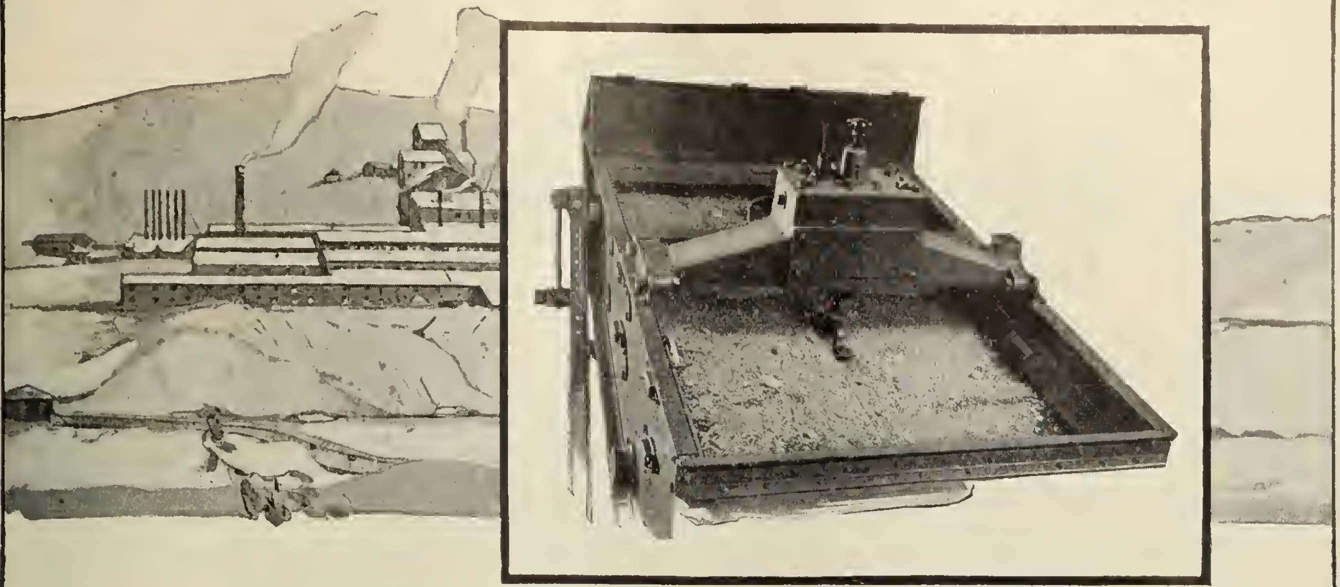
RAIL ADJUSTMENT BOARD UNDER FIRE.

Considerable active protest is now being made against the proposal to establish a national adjustment board to deal with the disputes arising between the railroads and their employes. The protest is based on the fact that the public has an interest here which must be protected.

There is evidently room for protest here, but on the other hand let us not forget that the welfare of the public also calls for some safeguard against strikes, especially on railroads. Plainly the owners and the managers of the individual railroads should be given authority in their management and in dealing with employes, otherwise it would be difficult to render efficient service to the public and do their duty by the stockholders. This, it seems, is the basis for protest against the setting up of adjustment boards to settle disputes between employer and employee.

Somewhere, somehow, there should be a provision for safeguarding the public. Perhaps the Kansas idea is thé right one, a court of industrial relations with a restriction on strikes. Anyway, we hope that in the rounds some plan will be arrived at by which the public can be protected against strikes and insure a continuation of service even when there are disputes between railway managers and railway employes.

HUM-MER INCLINED SCREEN



Powerful Electro-Magnetic Vibration with Drumhead Tension

IN THE HUM-MER Inclined Screen, electro-magnetic vibration has been commercially applied in the screening art for the first time in history.

The vibration is produced by means of a high-speed electro-magnet and is applied directly to a taut, drumhead tension screening surface. The electro-magnet pulls the screen cloth upwards with a sharp jerk; the alternations of the current pulling up and releasing the screen at high speed.

The combining of drumhead tension with electro-magnetic vibration, produces an intense, powerful vibration which makes the HUM-MER stand out as distinctly different and far more efficient than any other means of separation.

THE INTENSITY OF THE VIBRATION CAN BE REGULATED TO MEET ANY CONDITION OF MATERIAL WHETHER COARSE, FINE OR OF VARYING MOISTURE CONTENT.

The sorting action in the HUM-MER is so effective that wonderful results in *tonnage* and *close separation* are produced.

The HUM-MER will handle either coarse or fine material, in fact, it will handle fine sizing in a manner that has never been possible heretofore. It will also handle many materials that could not be handled by other types of screening equipment.

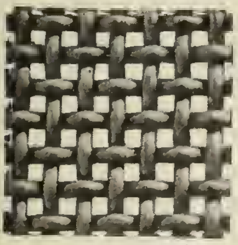
A FEW PROMINENT USERS
OF *HUM-MER* SCREENS

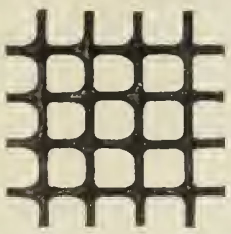
Bethlehem Steel Co.
Pittsburgh Plate Glass Co.
Arizona Copper Co., Ltd.
Ottawa Silica Co.
The Belden Brick Co.
Morris Fertilizer Co.
Goodyear Tire & Rubber Co.
American Smelting & Refining Co.
Continental Portland Cement Co.
Laclede-Christy Co.
The Norton Co.
Diamond Alkali Co.

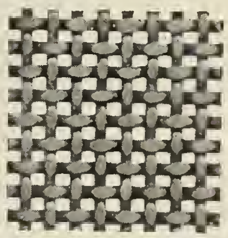
"Makes wire cloth screen faster and wear longer"

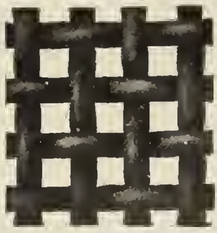
Write for Catalogue 42-W

THE W. S. TYLER COMPANY, *Cleveland, Ohio*
Manufacturers of Woven Wire Screens and Screening Equipment









The American Face Brick Association
And
The Face Brick Dealers' Association
Will Hold Their Annual Meetings
December 1st, 2nd, and 3rd at

"The Carlsbad of America"

Headquarters will be at
French Lick Springs Hotel
The Home of Pluto

FRENCH LICK SPRINGS HOTEL CO.

FRENCH LICK, INDIANA

Thomas Taggart, President
Thomas D. Taggart, Manager

On the MONON and SOUTHERN
RAILWAYS

OPEN ALL THE YEAR AROUND

THE
Underwood Producer Gas Burning System
PATENTED

Makes a new record and wonderful demonstration in Salt Glazing Sewer Pipe and other clay products with a marked degree of success and great satisfaction to all who witnessed the test.

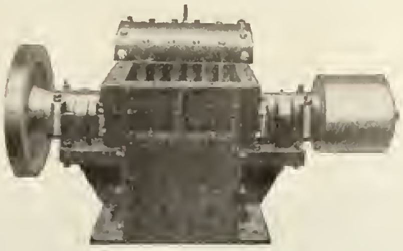
The economy of burning clay products with Producer Gas has long been an established fact, and with the new achievement of successfully Salt Glazing all kinds of clay ware the Producer Gas Burning System becomes more valuable than ever before.

Men of high standing in the manufacture of salt glazed clay products have placed their stamp of approval on Producer Gas as a fuel in burning periodic kilns by reason of low fuel consumption, quick burning, no loss of temperature in salting, ware perfectly glazed and ideal conditions during the salting period.

Makers of sewer pipe, conduits, building blocks, chemical stoneware, salt glazed brick, etc., should earnestly consider, and without delay, our Producer Gas Burning System for burning their goods.

Write us for full information.

The Manufacturers Equipment Co.
Dayton, Ohio, U. S. A.



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are increasing production and reducing costs for hundreds of big operators.

Large or small pieces of clay, shale and other materials, dry or moist, are reduced to any degree of fineness, in one operation.

Their rugged strength, freedom from repairs, greater capacity per horsepower and economical operation, make Gruendler Crushers the most profitable machines you can buy.

Literature and full particulars will be sent upon request.

Gruendler Patent Crusher & Pulverizer Co.

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You wouldn't blindfold your burners!

Then why handicap them almost as effectively by making them guess at kiln temperatures?

THWING

HIGH RESISTANCE MULTIPLE RECORD

PYROMETERS

help your burners to do better work

Write for full information

Thwing Instrument Company

Lancaster Ave. and Cuthbert St. Philadelphia, Pa.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.

BRICK MANUFACTURERS of Evansville and southern Indiana report that trade has been fairly good for the past month or six weeks, but it is expected that building operations will slacken up soon, or when bad weather sets in. Many of the brick plants in the southern part of the state have been operating pretty steadily for some time past and taking the trade situation as a whole, it has been much better than it was last year. Building operations in Evansville for September showed a falling off, however, as compared to the same month last year. The value of the permits was about one-third that of last September.

The plan of the contractors in Evansville to stimulate building operations in that city is regarded as a good one and will probably work out all right. This plan was mentioned briefly in the last issue of Clay-Worker. A man building a home takes out a life insurance policy and in case of his death the policy is paid into the hands of the company building the home for the man and the house is then turned over to his wife or other heirs. The plan, which is said to have been successfully worked out in other cities, was started several weeks ago by the Allied Contractors' Association and Henry C. Kleymeyer, manager of the Standard Brick Manufacturing Company, was named on the committee that met with a committee from the Evansville Real Estate Exchange and the plan was gone over carefully and it was finally adopted. It is proposed to form a building company with capital stock of about $100,000 and shares of $100 will be sold to contractors and other people in Evansville, who are interested in building. It is believed that by early next year the plan will be well under way and that it will be the means of greatly stimulating building in the city of Evansville.

While there has been considerable building in the city of Evansville during the past season it has been largely of a commercial nature. A good many manufacturing plants and additions have been erected, but there has not been as much home building as was anticipated on the first of the year. The contractors of Evansville are going to have their wives make a canvass of the city to see the number of people who do not own their homes and an effort will be made to interest them in building their homes on the easy payment plan that the organization being formed will outline. The wages of the men will be ascertained and just what they are able to pay per month on a home will be ascertained.

Tile manufacturers of southern Indiana report that they have had a very good season and that they have little reason to complain. The two great handicaps have been the car shortage and their inability to get labor. The car shortage situation has shown little or no improvement during the past few weeks. There is more of a labor shortage just now than there has been for some time past.

Fire of undetermined origin a few days ago destroyed the Geet tile mills at North Manchester, Ind., with a loss of about $25,000. The fire department of the city was called out but was unable to save the plant. The loss was partly covered by insurance. It is not known if the plant will be rebuilt.

Henry C. Kleymeyer, general manager of the Standard Brick Manufacturing Company of Evansville, returned a few days ago from a business trip to Indianapolis, Dayton, Ohio, and Louisville, Ky., where he went to secure new machinery for some of the company's plants. While away, Mr. Kleymeyer also investigated the housing conditions in the cities visited and he made a report on this to the Allied Contractors' Association upon his return home. A HOOSIER.

"MARTIN" BRICK MACHINERY

"MARTIN" PIPE RACK DRYERS

COME TO LANCASTER, PA.

SEE this machinery making 5,000 bricks per hour.
SEE how this machinery is built in our own shops.

CLAY DELIVERY EQUIPMENT

Dump Cars — Winding Drums
Elevators — Conveyors

CLAY PREPARING EQUIPMENT

Granulators — Crushers
Pug Mills — Disintegrators

BRICK MAKING EQUIPMENT

Style "A"
"Martin" Brick Machines
Style "B"

DRYING EQUIPMENT

"Martin" Pipe Rack Dryers
Transfer Cars — Dry Brick Cars

CABLE CONVEYORS

PORTABLE and PERMANENT Conveyors

BRICK PLANT SUPPLIES

Mold Sanders — Sand Dryers
Sand Grinders and Sifters — Brickbat Crushers

COMPLETE EQUIPMENTS for
BUILDING BRICK PLANTS and
FIRE BRICK PLANTS
By THE SOFT MUD PROCESS

"MARTIN" CABLE CONVEYOR SYSTEMS

New York Office
501 Fifth Ave.

Lancaster Iron Works

Incorporated
Lancaster, Penna.

Brick Machinery Dept.
James P. Martin
Manager

SAVE

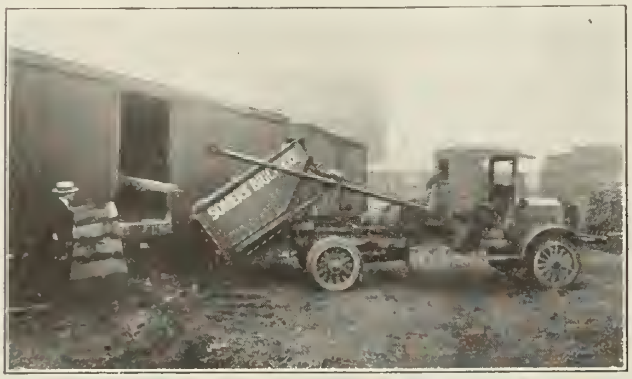
The Fontaine Demountable Bodies

$20.00 TO $45.00

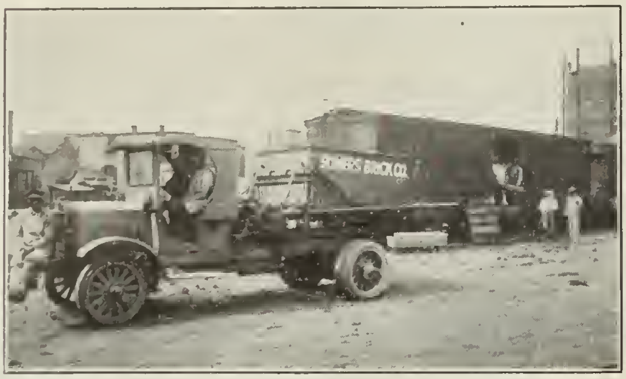
Delivers Brick in Neat Manner Without Any

REDUCES LABOR COST

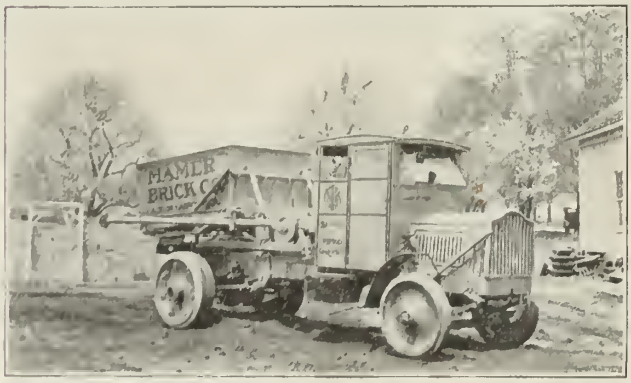
Makes one truck do
the work of two



Loading Demountable Body From Freight Car.



Truck Load of Brick on Way to Job, Atlantic City, N. J.



Truck and Body Used by Mamer Bros, Benton Harbor, Mich.

WHAT USERS SAY:

"Our truck, with your 1,000-brick body, has taken the place of four teams. The Fontaine Body is especially adapted for handling FACE BRICK, not only cheaper, but brick are delivered in a perfect condition, none broken, cracked or even chipped."

"Our two trucks, equipped with Fontaine Bodies, deliver more brick than ten mule teams. One type, 'F,' or 1,000-brick capacity outfit, delivers 11,000 brick per day on a five-mile haul, whereas five mule teams deliver only 10,000 brick on same haul."

"During a test in St. Louis our 2,000-brick outfit delivered more brick than eight teams in the same time, and delivered all of them in perfect condition, just as they came from kiln."

The Somers Brick Co., Atlantic City, N. J., have ordered their second outfit. They say:

"The truck and bodies are now operating from Bakersville, making four trips per day, with a total mileage of 95 miles, carrying 2,500 brick per load. On account of the 40 per cent. increase in freight rates, we are considering hauling all our brick from Bakersville by this means."

Send for our handsome two-colored circular, with 15 illustrations, recommendations, description and specification.
Copy free upon request.

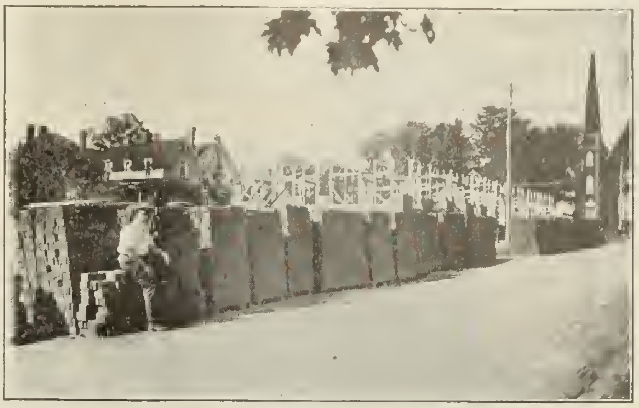
For Handling Brick

PER. DAY

Breaking or Chipping ⟶

READ

What this satisfied user has to say.



Sixty thousand Brick delivered without one Broken or Chipped

THE BELDEN BRICK COMPANY
Makers of Clay Products
Canton, Ohio., Sept. 13, 1920.

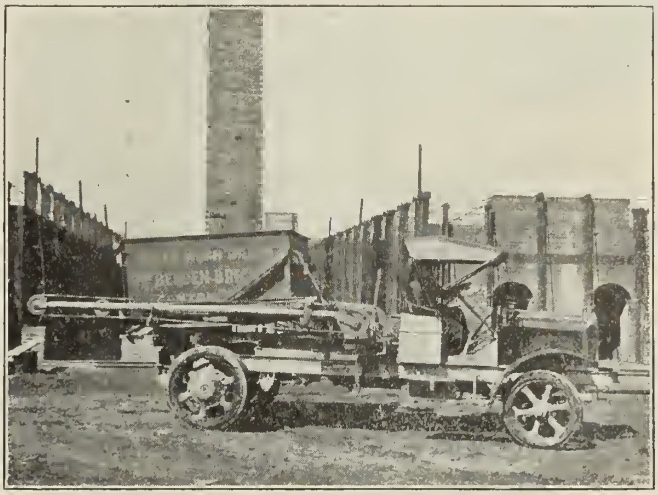
American Truck Body Co., Inc.,
Martinsville, Va.

Gentlemen:

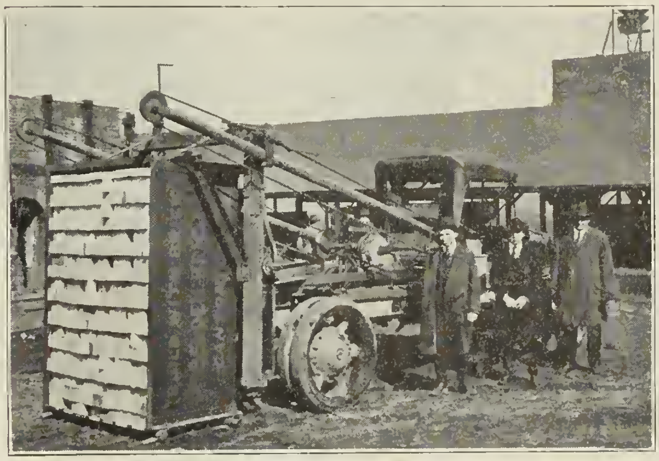
After using your Type "FF" "FONTAINE DEMOUNTABLE BRICK BODY" for the past six months will say, it has met our requirements in every respect. We were just talking the other day had it not been for our "DEMOUNTABLE SYSTEM" we would have been up against it on deliveries as we have made several trips from our Port Washington Plant, a distance of 50 miles. By doing this we were able to keep the jobs going when we could not get cars. Hardly a week passes that we do not have an inquiry from someone asking how our equipment is working. We assure you that it gives us great pleasure to recommend this equipment. The writer would be very glad to show your Type "FF" under working conditions to any prospective customer you might wish to send here, as it is working every day and stacking "FACE BRICK" in a perfect manner.

Wishing you success, we remain,
Yours very truly,
THE BELDEN BRICK CO.,
H. G. MOORE,
Superintendent.

M:H



Truck and Body Used by Belden Brick Co., Canton, Ohio.



Note the Neatness and Compactness of Brick Unit.

The Fontaine Demountable Bodies for handling brick and other materials is the **GREATEST LABOR-SAVING EQUIPMENT** on the market, and every day you delay buying you lose from $20.00 to $45.00 per day.

American Truck Body Company Inc.

Martinsville, Virginia

With Chase Flexible and Reversible Bearing and Folding Deck.

Single, Double and Triple Deck Dryer Cars, Transfer and Dump Cars, Turntables, Switches and Trackage.

The Chase Foundry & Mfg. Co., Columbus, O.

BAIRD

POT MOLDING MACHINERY

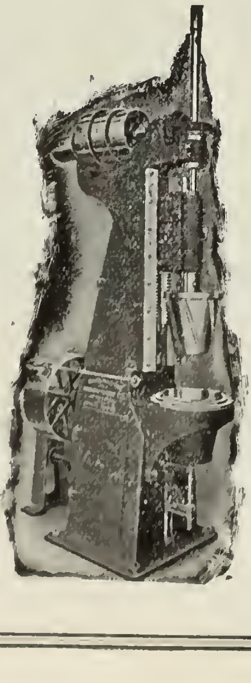
These Machines in Addition to the Manufacturing of Flower Pots Can Be Used for

Stone Ware	Saggers
Crucibles	Sleeves
Runner Brick	Nozzles

We specialize machines for the Manufacture of Pottery and Guarantee every one we sell.

Write us for information

Baird
Machine & Mfg. Co.
265-69 Jefferson East.
Detroit, Mich.



PACIFIC COAST NEWS.

BUILDING is very slack at present in San Francisco, partly because of the approaching rainy season, but more particularly because of present labor conditions. There are at least three crafts on the verge of striking: plasterers, painters and structural iron workers, and this alone would be sufficient to hold up building activities drastically. Then, too, many builders are waiting for a possible drop in wages and building material costs. The latter condition is liable to hold up building indefinitely, as local brick and tile men say there is no chance of a reduction in these commodities for some time. The cost of materials is based on labor and fuel. Labor has not yet come down, and fuel, particularly oil, is going up. However, the public seems to hope that the November election will clear the industrial and commercial air, and are holding off till then to do much of the building that is imminent now.

Merced, California, has been selected by the California pottery company as the location for their new pottery plant, which is expected to be completed in three months. Merced was chosen, says Mr. Costello, president of the company, because there is very good clay there, and it is practically the only point in the San Joaquin Valley that has an extensive clay deposit.

The capital stock of the company is fixed at $500,000 for which new articles of incorporation are being drafted. The output, it is expected, will exceed a million dollars, annually. The machinery, $15,000 worth, has been purchased and is on its way to the site where actual construction will not start till the spur track is in. The fifty-acre plot of land is adjacent to the Southern Pacific right of way and just east of the county hospital. The plant proper will cover four acres.

The output of the factory will be principally hollow-tile for which there is an increasing demand particularly in the San Joaquin Valley. The California Pottery Company are agents for the Los Angelés Brick Company which, Mr. Costello says, are not nearly able to supply the demand for hollow tile in that district. Hence, the immediate need for a new factory.

The California Pottery Company is a well known industry in this section, having been operating since 1887, with its main plant in Oakland, and with offices in that city and in San Francisco. The company has also a sales yard in Fresno.

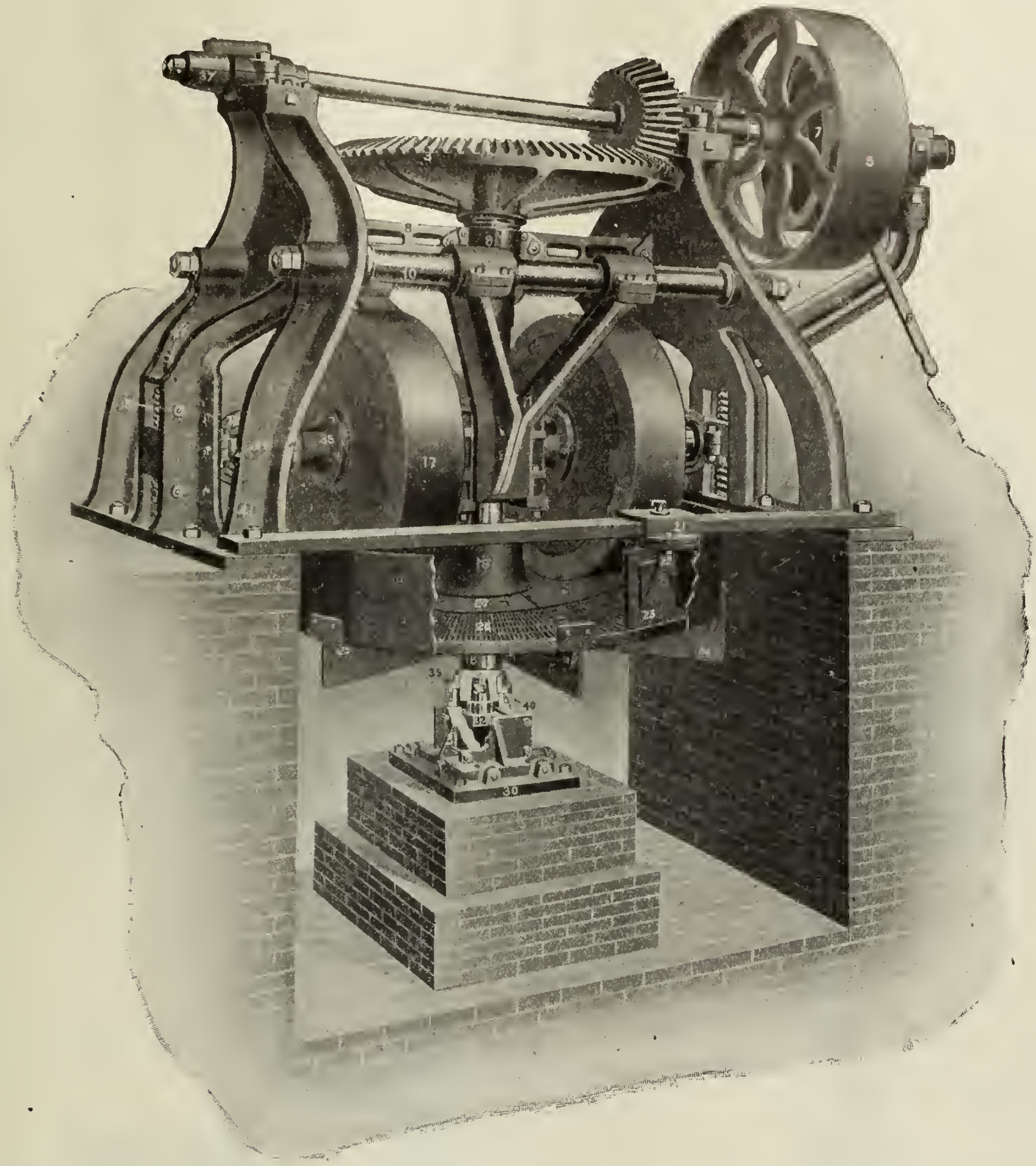
The manufacture of magnesite brick, a high grade type of fire brick, promises to become a new industry for Southern California when a magnesite brick factory will be under way shortly in Vernon. Magnesite will be shipped to the plant from the deposits at Winchester near Riverside, according to T. F. Conway of the freight department of the Santa Fe Railroad.

Homer Knowles, president and general manager of the Knowles Pottery Company of East Liverpool, Ohio, has been seeking a location in California for a million dollar pottery factory with a payroll ranging from $40,000 to $50,000 monthly. The proposed industry would enrich the community selected by nearly 1500 people. Mr. Knowles has considered various points of the state, but has finally declared that Santa Clara will probably be the site selected. Mr. Knowles met the directors of the Santa Clara Chamber of Commerce and a delegation of business men whom he asked to assist him in securing subscribers for the pottery stock to the amount of $200,000.

Articles of incorporation of the Pioneer Brick and Tile Company were filed September 21st in the county clerk's office, Fresno. The object of the new corporation is the making and selling of brick, and dealing in lime, tile and cement. The capital is to be $500,000 in shares of $100 each. The directors named are: John and A. E. Eltzenhauser; J. W. and

(Continued on page 360)

→STEVENSON←



TEN FOOT DRY PAN

"There's a reason why the trade prefers STEVENSON EQUIPMENT"

THE STEVENSON COMPANY

General Office & Works
WELLSVILLE
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Western Sales & Engineering Office
801—802 Monadnock Bldg.
CHICAGO, ILLS.

SEND FOR BULLETIN No. 53

THE ANNEX

NEW YORK

WHEN Hotel McAlpin acquired The Annex, formerly the Martinique, there was established, first the spirit of enthusiastic attention that never fails to assure a guest that his patronage is valued.

Following closely upon this first important step came others which have proved equally successful—among them an expert Bureau of Information and Assistance which enables a guest to leave the details of his arrival, departure and trips he wishes to make to people who are able and willing to assume them.

Under the direction of L. M. Boomer
Frank E. Jago, Resident Manager

32nd Street and Broadway

PACIFIC COAST NEWS.

(Continued from page 358.)

Daisy S. Fewell, all of Fresno; and D. E. Perkins of Visalia. The main office is to be located in Fresno.

The Inland Pottery Company of Spokane has installed new machinery to meet the growing demand of the Northwest. The pottery secures its clay from Clayton, 25 miles north of Spokane.

The Salem Tile and Marble Company supplied the tile used for the Sacred Heart Academy now under way at Klamath Falls, Ore. The academy building is the first large structure in which Salem tile has been used in that part of the state.

The McNear Brick Company of San Francisco expect business to be very good next year. They have already sold one-third of their output for the coming year. The McNear Brick plant, unlike many California plants during the dull season, never shuts down at any season of the year. The plant is located at Petaluma.

New clay beds have been discovered at Montesano, Wash. A clay deposit at the old cemetery west of town is found to be admirably suited for the purpose of moulders and is being shipped to Tacoma for that purpose. The city derives a revenue of $7.50 a carload, the moulders standing all expense of handling.

The United Materials Company is making some extensive improvements on their plant at Port Costa, California. The drying room is being remodeled to admit of a capacity of a million and a half bricks and the machine house is being altered accordingly. Crushed bricks for roofing purposes will be supplied by a crushing plant that is now ready to make shipments. The entire construction including additions and alterations will be completed in about two months. C. G. Berg, president of the Port Costa Brick Works, states that the labor situation in their plant is better than at any time during the past few years.

SUNSET.

A LABOR SAVING DEVICE

OUR ONE-MAN TRUCK—

the Invincible Truck—should be used on every sewer pipe plant in this country. Saves labor, time and trouble.

Adjustments are made in two minutes for changing to different size boards.

One man can handle 30-in. pipe with case

Positively no load on handles and no triggers on the lift.

TORONTO FOUNDRY & MACHINE CO.
Toronto, Ohio

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NOVEMBER, 1920

THE CLAY-WORKER

TILE ROOFING IN CALIFORNIA:— Clay Tile Roofed Old Adobe Hut and Tulle Fence, Santa Barbara, California—See Page 407.

Published Monthly by
T. A. RANDALL & CO.
INDIANAPOLIS, IND.
OFFICIAL ORGAN OF THE N.B.M.A.

Published monthly. Subscription price, $2.00 per year. Entered as second class matter, January, 1884, at the post office at Indianapolis, under the act of March 3, 1879. Title registered and contents Copyrighted by T. A. Randall & Co., 1919.

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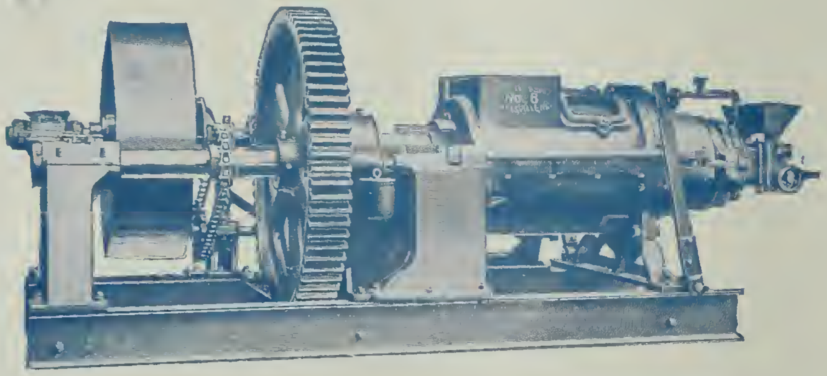
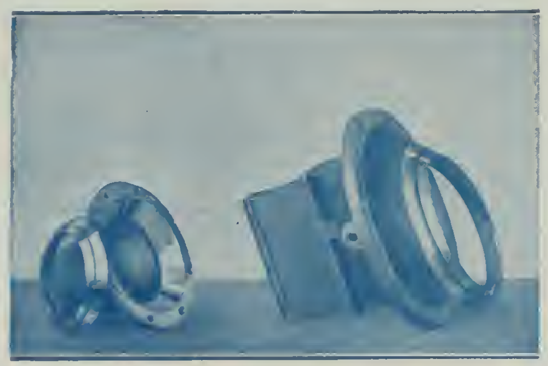
Direct Geared Machinery for Brick Plants

We do not claim to be the originators of the Single Geared Machine, the first brick machine ever built being of that type. We have, however, so proportioned the gears and pulleys as to get the best results. Some of the advantages are: Saving in Power, Quiet Operation, Greatly Reduced Repair Costs, Operation at High Speed without Damage. All very essential during these times. If weary of the vibration, hammering and breakage of an old compound-geared machine you will not regret having investigated the Steele Direct Geared Machines. We present cuts of a few machines below.

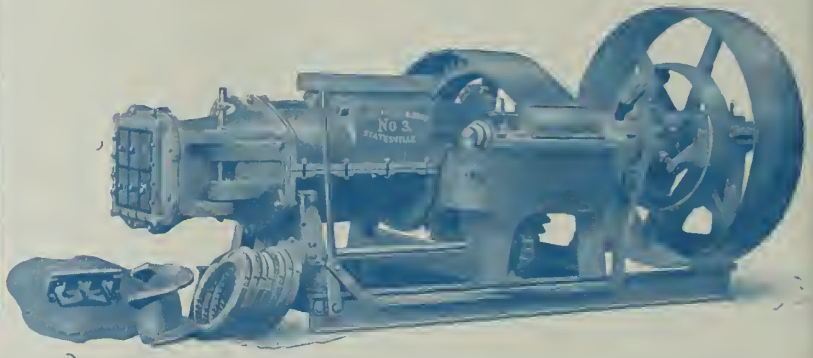


Miniature Cut of
No. 6 Machine, Side or Endcut.
Capacity, 15,000 per Hour.
A Mighty Machine.

Four Sizes of this Machine
Side or Endcut.



Oil Dies of Improved Type Side and End Cut.



Several Sizes of Tile and Block Machines.

J. C. STEELE & SONS **Statesville, No. Carolina, U.S.A.**

CLAYWORKING MACHINERY

Western Representative: Geo. H. Smith, 3309 E. 37th St., Kansas City, Missouri
Northern Agents: The Manufacturers Equipment Co., Dayton, Ohio

Mention The Clay-Worker.

THE CLAY-WORKER

THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 74. INDIANAPOLIS, NOVEMBER, 1920. No. 5

TILE ROOFING IN CALIFORNIA:

Widespread Use of Roofing Tile in far Pacific Coast State, Due To Artistic Appearance and Well Founded Belief That It Is the Only Perfect Fireproof Shelter.

ONE OF THE STRIKING architectural features that impresses visitors to California is the widespread use of terra cotta tile roofs in widely different types of buildings. Hospitals, post-offices, schools, barracks, police stations, depots, churches, theatres and residences are roofed with terra cotta tile. The Mission and Spanish tiles seem to be the most popular, although there are not a few roofs covered with Italian and shingle clay tiles.

By many the tiled roof is considered the only perfect shelter—not only leak-proof, but fire-proof. It requires no repairs, is unaffected by time, and lasts forever. This is emphasized by the fact that while the adobe walls of the many historic Missions are in ruins, the tiles on the roofs have survived—that is, where they have not been stolen by mercenary vandals.

It is supposed that the Mission Fathers followed the ancient custom of kneading or working the clay in pits under the hoofs of animals, then giving it time to age properly. The tiles were probably made by spreading the right quantity of clay on a broad or flat surface, patting it to a cake of the right thickness and size, then deftly flopping it over a half round piece of wood which was first well sanded so the clay would not adhere. The clay was pressed and shaped to the form by hand, trimmed about the edges, dried in the sun, and fired more or less perfectly in small kilns. The pressure of the hand gave the tile a consistency and a surface which machine-made tiles lack.

The Picturesque Bowie Lawn and Residence, San Mateo, California.

The Mission tile is especially suited to adobe, cement, or plaster structures, which are very popular in California, because they fit in especially well with the bright sunshine and brilliant sky of this beautiful country.

Down in Santa Barbara, not long ago, I encountered an old adobe house roofed with venerable tiles so crudely made that it would have been impossible to have secured a perfect regularity in the "lining up." The heavy effect produced was not bad, for it was in keeping with the massive walls and the odd fence made of crooked branches of trees, fairly uniform in height and thickness, that served as a frame work for the effective color combination of red tiled roof, gray walls, green trees and blue sky.

Green—light and dark—as well as red tiles are popular. There was formerly a demand for Mission and Spanish tiles all one shade. This gave the roof the appearance of being painted. Today, those architects who use tile extensively, insist on broken colors, as the variegated shades relieve the monotony and give character to the roof.

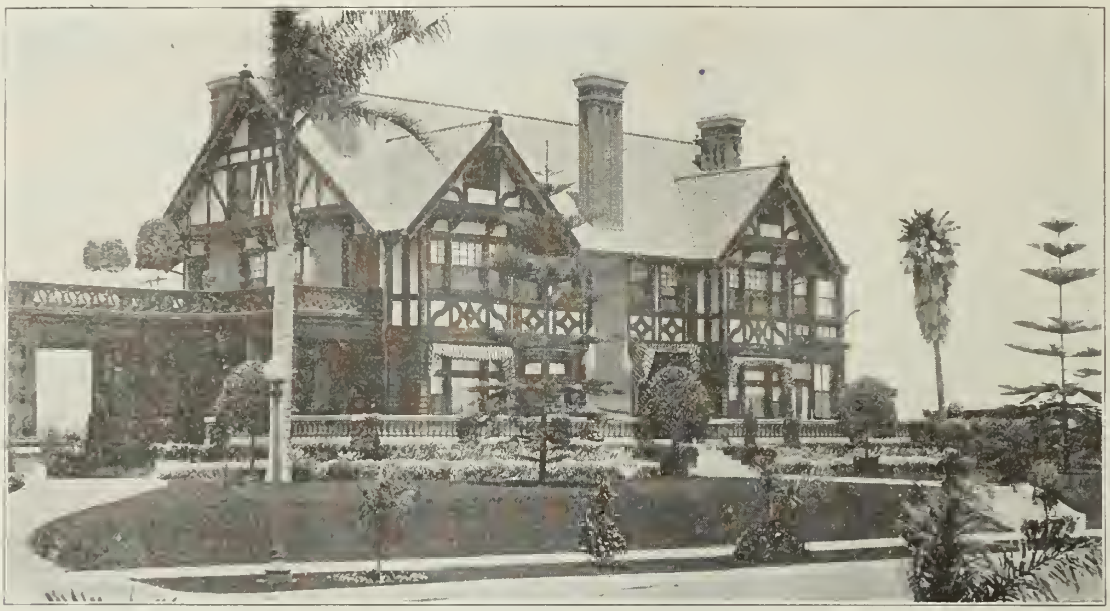
Well known architects, like Willis Polk, Louis 'C. Mulgart and John Galen Howard, want the tiles as rough as they can get them and often make it a point to lay them as irregularly as possible, to give the roof an appearance of age.

of place. For instance, I believe 'the builders of the Marsh home shown below would have done better to have used the shingle or slate tile than the warm Spanish tile that does not suit the cold Gothic style.

On the other hand, the Iliff home at Santa Cruz is admirably adapted for a Spanish tile roof. The design of the building is graceful and typically Mission. Its location is ideal, for it stands on the Cliff Drive, at the further end of the half-moon curve of what many travelers claim to be one of the most beautiful bays in the world—historic Monterey Bay, around which clings so many stories and memories of the Franciscan Fathers who introduced the Mission tile into California.

In pitch, the tiled roofs of today vary as much as did the Mission roofs of old. Some are very steep, others broken with windows, while still others are flanked with pyramidical towers or arranged in a series of tiers at different elevations.

The Bowie residence at San Mateo shows the variety of ways in which the Mission tiles can be utilized. The center of the building is one story in height and has a steep-pitched roof covered with Mission tiles. It is flanked with second-story rooms, shingled, with the cornices trimmed with tile. On either side extend one-story wings, the roofs of which are flat with the facade only trimmed with tiles set at a steep angle in a concrete bed. It would, of course, have been a waste of money to have tiled the flat roofs, for they are shut off from view and unseen.



R. A. Marsh Residence, Los Angeles, California—Note Spanish Tile Roof and Massive Brick Chimneys.

The depot at aristocratic Burlingame affords one an excellent opportunity to contrast the old and new Mission tiles. The roof of the original building was covered with ancient, irregularly shaped tiles taken from one of the old southern Missions. When a tower and additional wing were added, it was found necessary to use modern-made tiles and if you will take the trouble to study the roofs carefully, you can easily detect the difference. The old tiles, owing to their irregularity in shape and thickness, are imperfectly aligned, while the modern commercial tiles are laid to a chalk-line with great precision.

When these tiles are used in modern structures, the builders usually see that the roof, on which they rest, is water-proof before the tiles are laid. As long as the rain runs down hill, the tiles carry off the rain they receive, but when the wind blows the water up against them, there is bound to be leakage unless there is some protection.

I have seen modern houses and business buildings roofed with Mission or Spanish tiles that seemed to me entirely out

Visitors to the Expositions at San Francisco and San Diego had an excellent opportunity to study the beauty of red tiled roofs. At both Fairs, most of the buildings were conceived in the Mission, Spanish, Colonial, Italian and Moorish spirit and demanded red-tiled roofs, which were made of either the real or imitation materials and carried out the color scheme admirably.—Horatio F. Hall.

One trouble with the cost of inventory figures this year is in that Uncle Sam's tax teasers want to give them the once over.

OUR EXPORT POTTERY TRADE.

While our export pottery trade is a small item in comparison with the domestic trade, it furnishes an interesting study illustrative of the progress of certain special side lines of clay products. The total export in all earthern, stone and china ware for the fiscal year ending with June, 1920, was $7,108,618. This included building and fire brick as representing about half of it while the balance is made up of china ware, earthern and stone ware, sanitary ware and tile other than drain.

In our daily consular reports during October there was a special review of our export trade in pottery products for the month of August, 1920, which furnishes an interesting study. The total for the month was $320,899, made up of china ware, earthern and stone ware, sanitary ware, tile other than drain, and miscellaneous ware in this class.

The heaviest purchaser of this outgoing product was Cuba, and a review of the purchases by Cuba for the month of August will give an idea of some of the interesting features of development in this trade.

The biggest item in Cuba's purchase during the month was closet bowls, lavatories and sinks, which was $35,307. Of tile other than drain Cuba purchased during August $15,627; of earthern and stone ware, $10,500; of china ware, $6,872; ot other earthern and stone, $23,354.

The interesting feature about this is the great showing made by sanitary ware which indicates that Cuba is building homes with bath rooms and lavatories, and is turning to this country for supplies. It also indicates that there goes with this sanitary ware quite a percentage of floor and wall tiling indicating both progress in the use of this item and an ability on the part of American manufacturers to supply in competition with others.

It is especially interesting to note that China bought tile other than drain from us during the month of August to $23,826, while the story of Cuba finds repetition on a smaller scale in Mexico in the sale of china ware, sanitary ware and tile. We can find in this some indication that Mexico may soon furnish quite an extensive market for a wide variety of pottery products.

Next to Cuba, Canada was our largest customer for pottery products, which is not surprising. In fact, the surprise is in that Cuba heads the list for the time being in the purchase of these items. Canada is a big field that logically should be buying regularly considerable quantities of our clay products.

Other Latin-American countries buying fair quantities of items in the pottery list are Columbia, Argentina, Haiti, Costa Rica, Panama, Dominican Republic.

MUTUAL POTTERIES COMPANY, TRENTON, N. J.

One of the largest pottery plants in that part of the country is now being erected in Trenton and is to be known as the Mutual Potteries Co. This is to be a sister company of the Trenton Potteries Co., but all accounts will be kept as separate companies. The officers of this company are Mr. John A. Campbell, president; Mr. E. S. Aitkin, vice-president, and Mr. Charles Lawton, treasurer. They will engage in the manufacture of general sanitary ware and will no doubt live up to the reputation which its sister company has already established. The contractors for the erection of the plant are Stone & Webster, of Boston, Mass. The machinery end of the plant will be taken care of entirely by the Crossley Machine Co., Trenton, who will install in the plant one of the latest and most up-to-date slip-houses in the country. With the addition of this plant the Trenton Potteries Co. will have one of the largest potteries in the world. They now control seven different plants in this city, and several in Canada.

TRUMBULL ELECTRIC CO., TRENTON.

The Trumbull Electric Co., of Plainville, Connecticut, recently erected a plant to take care of its porcelain requirements in this city. The reason for erecting this plant was due to the scarcity of porcelain in the East.

The Beautiful Tile Roofed Ketcham Residence, Santa Monica, California, Stucco on Hollow Tile.

POINTS ON PLANT MANAGEMENT

Progressive Management Means Effort To Secure Greater Efficiency, Better Quality of Product, and Better Conditions For The Man Doing The Work.

SECOND CHAPTER.

PLANT MANAGEMENT, that is, the progressive conduct of a manufacturing plant once developed and in operation, involves a sort of three-fold purpose. One is to maintain a high order of efficiency to minimize the manufacturing cost; one is to maintain the quality of the product, and yet another is to maintain the best practical conditions for those working in the plant, both as to pay and as to environment. Generally we treat plant management as separate and apart from the plant location, arrangement and equipment, yet we cannot entirely divorce these because real efficiency in the management quite often depends upon the other factors involved, in location and equipment and general arrangement. So, quite frequently plant management proper may involve a revision of the plant equipment. Sometimes, of course, the manager of a plant has participated in its original layout and equipment, and even when this is not the case, progressive work and management involves changes and additions from time to time to the plant equipment, and these have direct bearing upon the probable efficiency of the plant. Some consideration of this properly belongs to the subject of plant management, therefore, a progressive plant manager may properly consider it a part of his duty to study equipment and plant layouts more or less continuously. He should visit other manufacturing institutions, keep an eye out for the various new offerings in machinery and equipment and when demonstrations of these are to be made somewhere within reach go see them so that he may know whether or not some new offering will fit in with the needs of his plant and improve his facilities or the quality of his product. The clayworking industry is one which is peculiar in this respect. The technical features involved and the many varying conditions are such as to make wide knowledge of what others have done and are doing essential to really progressive management of a clayworking plant.

Operative Management.

Now, while the question of equipment arrangement and rearrangement will always be bobbing up here and there in the clayworking industry it is well to consider for a moment the subject of operative management pure and simple. That is, the plans of organization and some of the ideas of the day as to scientific management in which both the authority and responsibility are divided up and efforts properly co-ordinated.

The modern science of business management is giving us new light on the subject and will prove of permanent benefit to industry. There is mixed in with it, however, quite a lot of idealistic bunk which is barren of practical results. We have had, for example, a lot of theories advocated for team work and how to co-ordinate effort of different departments of a plant, but when we finally sift it down a lot of it shows some relationship to socialistic doctrines in that it leads to confusion instead of progress.

An Industrial Fallacy.

Some of the preachers of democracy in industry have sought to convince us by argument that by setting up a sort of democratic government in industry and practically turning the reigns of management over to committee conferences of workers, foremen and managers, a new industrial millennium will be the result. Plenty of those who have tried it found that the result is something entirely different, and too often brings more discord and more dissatisfaction than existed previously without any improvement either in the quality or quantity of output. As a result of some experimenting with theories of this kind the industrial world is coming to realize that managerial talent is a special talent just like a talent for any other one calling, or a talent for art or music. In a word, men must have a gift for management to make a success at it and with this gift properly developed they must have authority and must develop some sort of system for making practical application of the gift of management. And in the final analysis the matter of team work and co-ordinating effort of different departments is up to the manager. The one sure way to get this is for the manager or superintendent to delegate authority and responsibility to foremen in different departments, then see that they toe the mark and keep their department up to the scratch. When they do this then there will be co-ordination, but when they fail to do this and the manager makes it a voluntary affair of honor between different departments the result about nine times out of ten is a lot of buck passing and breaking down of his organization into fault finding and failure to function properly.

Development vs. Revolutions.

All this brings to mind, too, another theory with more point to it than some of those of industrial democracy. That theory is that revolutions in industry take place slowly, it is seldom that either a machine or new idea in management works a sudden revolution in industrial methods or in any one industrial plant. It matters but little whether an old manager gets a lot of new ideas, or a new manager comes on the job, progress toward improvement is more generally made though evolution than through efforts at revolutionary or radical methods. There are exceptional cases where heroic remedies must be applied, and where radical changes are plainly essential, but these are the exception rather than the rule.

It Takes Time to Make Changes.

We have of course new inventions in machines which we speak of as revolutionizing either an industry or any particular kind of work. Illustrative of this is the motor truck, which is revolutionizing delivery and short distance transportation. Also it enters into factory and interplant transportation. Still, while the motor truck may be classed as revolutionary in character, its adoption and the change it has worked in the industries has come gradually and has taken a period of practically ten years.

One explanation of this is that capital invested in existing equipment is not scrapped immediately when some new offering comes along. Quite often we wait till old machines are worn before replacing them with improved machines, and also we find that men are slow to be moved to new ideas of this kind. So that sudden revolution and radical improvements are things that we see more of in fiction than in fact.

Charts Should Guide, Not Hinder.

There is available to plant managers and superintendents in various libraries and publications on modern business, many detailed charts and plans for plant management covering every phase of the business from systematic general organization to the details of handling every department. These are interesting things to study but they are not always good things to follow blindly. A study of them will help broaden one's viewpoint and it should furnish new ideas and give definite form to plans for improvement in systematic management. There should go with these studies, however, a warning notice against becoming academic and trying to follow specific details instead of the spirit of an idea gained.

Material Handling as a Feature.

Any line of study with a view to progress and improvement in plant management almost invariably leads to the matter of labor saving through new equipment and rearrangement of equipment, or some reorganizing of the methods of handling men. At this point one studying the subject should realize that there are two distinct lines of effort both the same, however, in their final results. One is labor saving machines and equipment, and the other is labor saving management. Both have their purpose in economy of manufacture and both should include as a consideration better conditions for the workmen as well as better results for the business.

Labor saving machinery as such may be subdivided into productive machines pure and simple, and into supplementary machines and devices for handling material and products between machines or the different steps in the process of manufacture. During the past year or two we have concentrated quite largely upon the subject of material handling as a sort of subdivision in labor saving mechanics. This division has grown so and has become of such widely recognized importance that the American Society of Mechanical Engineers has organized a special council or division upon material handling. It is a feature, too, which merits the earnest attention of plant managers and it is one of those things in which a manager and superintendent can gain new ideas and profit from visiting other plants, and expositions where demonstrations are being given of devices for improved methods of material handling. The reason is that quite often one may greatly increase the turnout of the plant and at the same time lessen the labor cost by the installation of scientific systems of material handling.

Increasing Production.

Quite commonly any plan for reducing manufacturing cost turns upon the point of increasing the quantity of production. There comes a time when it is essential to strive for reduced cost without increasing production, and some day in the future we may have to make a very strong feature of this problem. Right now, however, in the clayworking industry the opportunity for enlargement in the consumption of clay products makes plenty of room to continue for several years at least efforts at economy with increased production as the broad road through which it may be accomplished most readily.

One should keep in mind here that increasing production does not bring economy in manufacture unless the method of increasing helps in some manner to relieve the burden of work and working cost. To double a plant equipment and to double the crew to get double quantity of product, while it will be plant enlargement, would not properly constitute progress and economy in plant management. On the other hand, if by the addition of a machine here, and some handling devices here and there, and a little shifting about of the crew one can increase production materially then there is a chance to score a distinct gain.

Enlarging "Bottle-Necks."

A retired manufacturer told the writer a story recently which emphasizes the point here and may contain more than a hint to plant managers and superintendents. He said they had a plant which was dragging along and not making the profit it should and they called a consultation between the owners, the sales department and himself as superintendent. In laying down the figures of cost and prices of sales he said it was evident that the manufacturing cost was pretty high and that they would either have to reduce the cost of manufacture or increase their selling price to get a fair profit. After debating it they concluded to try both. The sales department promised to revise its prices upward and to make strenuous effort to get more money that way. Meantime the superintendent told them that if they could sell the product he believed that by adding only a few more machines and a few more men he could double the output of the plant. He had concluded from a study of their operations that many of the machines were capable of producing more, and there were just a few bottle-neck conditions here and there in the plant acting as pace-setters which could be enlarged and the plant output doubled. He said they went at it earnestly and accomplished both. With the rearrangement of his machines and the addition of a few more he was able to double the quantity with only a small increase in the pay roll, and fortunately the sales department was able to sell the increased production. So at the end of the year they had their business in a more prosperous condition than they had ever dreamed of before, and it gave them a new light on the possibility of effort properly directed and persistently followed up.

A Winter Suggestion.

There will likely be many opportunities during the winter for plant managers to get new ideas of practical value in the clayworking industry both as to machines and handling devices and as to burning and burning methods. The machinery and equipment people are actively at work on new ideas, and others who have been experimenting in their own plants will develop and prove out many new ideas some of which will be told about at conventions, others through the trade papers, and in most all cases other clayworkers will be made welcome at those plants which have installed new equipment to study its work. Moreover, conditions are such right now that attendance at conventions, reading trade papers, and visiting others who have installed new equipment, should prove of profitable use for a good part of the spare time this winter.

STANDARDIZING STRUCTURAL SPECIFICATIONS.

There is obvious need for standardization in structural specification and details as well as in the materials of construction. Moreover, there is a noticeably favorable movement in this direction and it seems that this is the idea and purpose which has resulted in forming the Structural Service Bureau, 1701 Walnut Street, Philadelphia, Pa. The declared purpose of the organization is to promote safer and more efficient use of building materials and devices through a better understanding of their nature, manufacture and utilization.

We are informed that they expect to turn out soon some informative data which has been prepared in co-operation with the brick and tile manufacturers on the subject of clay products. Already they have issued some interesting data and standards on structural slate with suggestions for specifying. The idea of definite service through standardization is a good one and we hope it will be fully and properly developed.

CLAY AND CLAY PRODUCTS OF THE FAR NORTH.*

By Jay Clark, Indianapolis, Ind.

AT THE present time there is no country or people being cussed or discussed as much as Russia and there is no country of which our people generally know less, and have received so much misinformation, I am going to make a frank acknowledgment right now and confide in you that I do not know all about the entire 185,000,000 people which are spread over 8,600,000 square miles, but having spent several months of 1919, in the region of Archangel, I picked up some first-hand information and a few dozen words of the language.

To reach northern Russia by water, you pass through the wonderful fjords of the land of the midnight sun, where you don't know when to go to bed and can't tell when to get up. The dinner bell is the only thing you understand and its hours are badly out of joint. You cannot tell north or south by the position of the sun and the compass needle points due west, the north pole is only 1,000 miles away and you are farther north than the north coast of Alaska, while Archangel, our objective point, is in the same latitude as central Alaska, but much warmer on account of the warm gulf stream, which moderates the Murman coast up to the entrance to the White Sea.

On the Dock at Archangel.

Young Men's Christian Association Headquarters at Archangel.

The first view of Archangel from the deck of the steamer is the never to be forgotten. The Greek Church cathedral and bell tower from a wonderful sky line and gives one the impression of a very substantial and well built city, and the commodious and modern docks add to the conclusion. Thousands of people in holiday attire line the shore to greet the arrival of the first ships of the seaon from foreign ports.

Having feasted your eyes on this group of Greek Church Cathedrals, you have a longing to see one of those picturesque black-robed long bearded priests one hears so much about, and as you leave the boat they are right there in singles, pairs and groups, generally friendly, but see that your watch and money are in a safe place.

Should a goodly delegation from this convention visit Russia and your mission, be it either peace of war, was properly advertised and it met with the approval of the high and mighty, a right royal welcome would be accorded and bread and salt would be tendered as an expression of the wecome.

A state house in Columbus or a Duma building in Russia is something not to be overlooked. This Duma is a goodly building constructed of stone and brick and only one tenth large enough to hold one-half the politicians who want to get there.

In 1917, we all read with interest how our ambassador to Russia, David R. Francis, was forced to leave Petrograd, of his trying experiences, and finally how he was besieged by the Bolsheviks in this our embassy building in Archangel, when they captured that city but were only to hold it for a short time owing to the efficiency of our troops.

Mr. Clark in the Shadow of Alabaster Cliff.

When Germany held sway in Northern Russia along the same lines they now hold most of European Russia, they erected a club house of domestic brick burned with wood and peat and each brick measuring 10½ inches by 5¼ inches, then having some time and money left they covered it over with cement and furnished it well, all to the satisfaction of the Y. M. C. A. who appropriated it as headquarters.

On market days, which is every day, anything can be offered for sale, peasant women come to town with baskets and birch bark pails contining most everything except something fit to eat, and while the women sell the wares and gossip, even as here, the men folks are hunting vodka or any other kind of liquor that has plenty of jazz in it, when their time could be so much more profitably used starting a good roads movement with the slogan "do it with brick" and then communicate with the brick manufacturers of the U. S. and invite some of the capable men who make road brick a specialty to go to their country and make road brick for them, then pull up the boulders which have been laid one deep and make a street that the droskies could skim over without throwing the passenger into the gutter.

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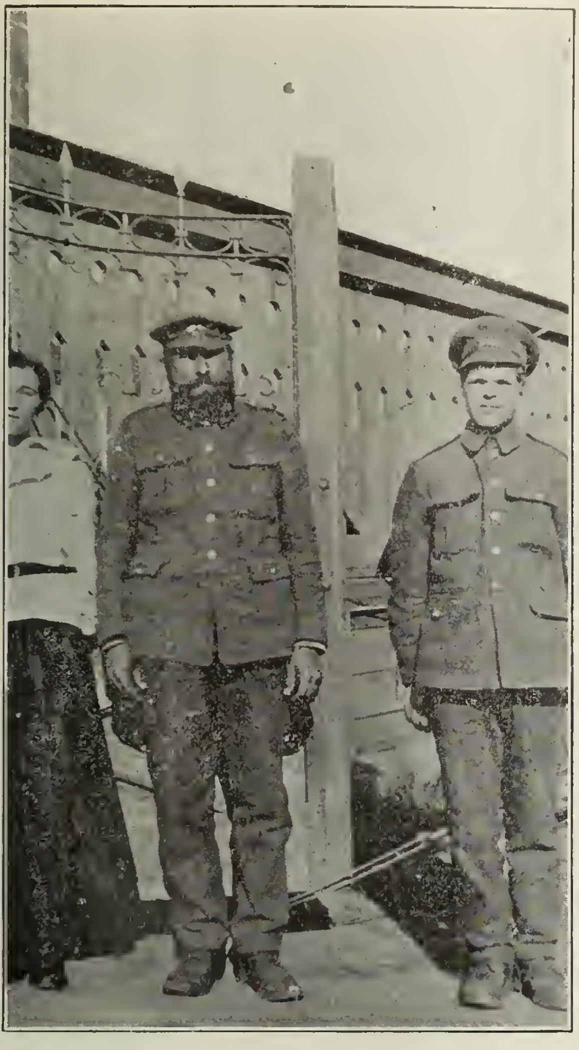
*Paper read before the Thirty-fourth Annual meeting of the National Brick Manufacturers' Association, Columbus, Ohio.

The ancient, modern and only way to attach a horse to a load in all Russia is by means of an arch over the horse's neck, the points resting against the inside of the shafts, a strong short leather tug extends from the hame, passes over the top of the shaft, and loops under the end of the arch, the arch prevents the shafts from irritating the sides of the horse.

The latest style in fine residences is neither pressed nor tapestry brick but squared logs, the lower story having cross scoring to give it a bonded effect, double window panes, and heavy carved casings. Even the fences are fancy and the entrance always at the side, all the brick men get from residences are the chimney and cooking range which is laid up by masons using their hands to spread the mortar in place of a trowel.



Father and Son Who Permit the Woman to do the Manual Labor.

The cathedrals of the Greek church in Archangel are all built of brick, even to the domes and bell towers, some are whitewashed and some are covered with a plaster of cement. The dome covering is copper and painted green while bright golden balls complete each of the five ornamental domes.

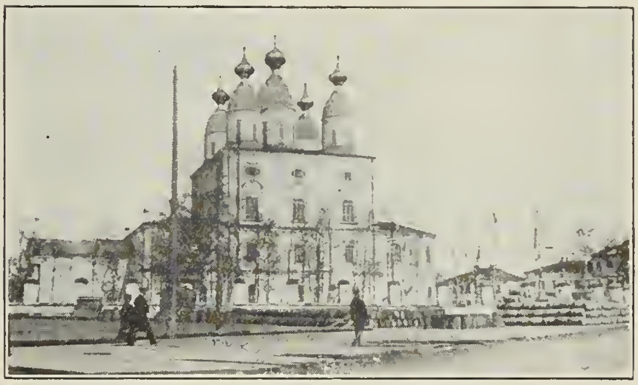
On the exterior of the Sebornia cathedral, wonderful bibical scenes have been worked out in hand cut mosaic tile; each of the figures is of heroic size and the color and workmanship cannot be excelled. So perfect is this work, that many people viewing it are under the false impression that they are admiring some famous painting in oil.

On the interior the floor is laid with most perfect tile, six inches square alternating red and white, the red is a beautiful rich color and almost vitreous and the white is clear and has an even surface. These tile were manufactured in Petrograd and would be the envy of any tile maker in the U. S. Mosaics adorn the walls and golden candlesticks hold continually burning tapers.

Archangel is located at the mouth of the Dvina river which is free from ice from May 1st till September 15th. It is a broad deep stream with low banks and flows through as fertile a valley as our own Mississippi. The river being the only means of travel, a large fleet of river boats, as near alike as Pullman cars, supply the means of travel. They vary from the Pullman however, in respect to sleeping accomodations as none are provided on the boats.

Villages line either bank at intervals of about two miles while between and beyond for hundreds of miles dense forests void of animal or bird life silently await the lumbermen. About 200 miles up from the mouth of the river occurs a wonderful geological formation, a deposit of gypsum and anhydrite, specimens of which were found to be very interesting to geologists in this country as anhydrite occurs at but two points in the U. S., Lockport, N. Y., and Nashville, Tenn., while that coming from Italy is used by sculptors. The natives call this deposit Alabaster Cliff. Overlaying this formation is a deposit of fire clay varying in thickness from two to eight feet and is a high refractory clay but only a very small amount has ever been used. The Cliff makes an ideal place to have a picture taken so while the boat took on wood I was duly recorded.

The Russian Drosky.



Greek Church with Brick Domes and Bell Towers.

At the end of three days on the boat, which also happened to be the end of three hundred miles, I sighted Berezneck and Prieston landing, which was the advance base of the army operating against the Bolshevik, and I would gladly undergo all the discomfort the trip entails to stand on this or a similar landing and watch every disciple of Bolshevism in America walk the gang plank.

The village of Semnoskia is a good half mile from the river and is typical of all north Russian villages. The street is a strip of land between two rows of log houses; the village is surrounded by a parcel of cleared land and the land is surrounded by the forest. The cleared land belongs to the village, but the forest belongs to the government, or did when there was a government.

At the town meeting which occurs once a year, each family is assigned a dwelling place, but there is very little room for disputes or jealousies on account of some drawing better homes, for they are as near alike as a row of contract houses in Chicago. Each family is also provided with a parcel of cleared land, which is larger or smaller, according to the fertility of the soil and its location.

Here indeed is the Socialists' ideal and it should suit the most exacting, for the lords of creation have plenty of time to discuss everything under the sun, and settle all problems they know nothing about, and then tell fairy stories which they actually believe. This ample time is made possible by the fact that the women do all the work, both in the house and out of doors.

The men do not live this life of ease because they are physically unfit for work. They size up very well in uniform, the ones under 26 years of age, however, have the advantage, as they are smooth faced, but the young man is not content and yearns for a beard. He soon gets it and it is soft, thick and long, and just when it is his pride and joy, he finds those little pests we dip cattle for, making life miserable and a shave is necessary.

Dunia Obrinkna is rather a rare beauty among the peasant class, also above the average in intelligence. She could write her name and could read a little. She knew about as much English as I knew of Russian language, and could use the word "finish" in more ways and places and get more different meanings out of it than Noah Webster ever thought of. Her hair is now combed back smoothly and she is a Barishner, but when she marries she will do her hair up on her head and she will be madam.

Alabaster Cliff on Dvina River and Mr. Clark's Boat.

Group of Russian Children.

The children of any country are interesting and these little folk have their games and sports, but quite different from the ones enjoyed by the children of the U. S. Toys are rare and the long, dark winters are very trying, so they indulge in long hours of sleep and become quite sluggish, but with the coming of spring, like little bears, they are again full of life and play, soon forgetting the long, trying winters of the far north.

Thanking for your kind attention, I wish you all Lucidania.

National Thrift Week is January 17-23, 1921. This may seem a long way off, but plans for its observance should be started early, and keeping this notice on the bulletin board will help as a reminder that thrift is a good habit all the year round.

PACIFIC COAST NEWS.

In SPITE OF a very good crop season which always has a decided influence on all business on the Pacific coast, a very dull season continues to hold the brick and clay products industry here tightly within its grip. This period of stagnation has been felt for some time by practically all local concerns and building operations now in this territory are at a minimum. The recent election is partly blamed by the large manufacturers for much of the dullness pervading the industry during the last few weeks.

However, notwithstanding the present inactivity, prospects for the future are more than bright it is conceded on all sides. Most of the present dickerings and transactions with the large companies are for deliveries for building operations next spring. Commencing with next spring it is thought by those best able to judge that a period of hitherto unprecedented prosperity for the brick and clay products industry will ensue for two or three years. This prognostication is based on the general outlook and feeling among all lines of trade and specific orders and business known to be contemplated.

A Typical Peasant Beauty.

Most all of the prominent men in the industry here are well satisfied with the results of the national election and many state that they look for a widespread condition of prosperity for all business with the ushering in of the new Republican administration. One event of great significance to California business is the approval by the electors at the election of the amendment providing for an increased rate of interest on road building bonds. If that measure had lost, highway construction in this state would have remained at a standstill as it has been for several months past due to inability to float bonds at the low rate of interest hitherto authorized by existing provisions of the law. With the amendment passed, highway construction on a large scale will commence very soon with an indirect stimulation of the brick and clay industries as a consequence. Much city street improvement will follow the highway construction, and it is thought that a boom in the paving brick industry is imminent.

Another bright aspect in the local situation is the better understanding with labor that seems to have come about within the last few weeks. During the months of last summer, there was an acute labor shortage due to high wages paid by farmers and fruit ranchers for unskilled hands. This drew heavily from the supply of labor in the cities with a deterring effect on production in the building materials industry. It also halted building operations to a considerable extent.

Last summer the Builders Exchange of San Francisco consolidated with the Contractors' Association in this city, in order to deal with the solidified bodies of unions acting through their building trades council. A "Central Council" with offices on Jessie street, was formed by the employers to combat what was thought to be high handed on the part of labor to profiteer. Presenting a solid front the Central Council has reached a satisfactory temporary agreement with the unions whereby the latter have returned to work about three weeks ago pending settlement of their claims by arbitration.

Through this solidification of the employers a threatened strike of large proportions has been averted, a lock-out of several weeks' duration abrogated. The men returned to work a short time at the old scale of wages pending arbitration. The previous contentions of the unions were settled by the mandates of the powerful Contractors' Association.

Considerable attention is being attracted to the project of the Bricklayers' Union through a great deal of publicity given it in the local daily press. The papers have featured statements of the union's business agent, Charles Noonan, to the effect that with the advent of the union owned brickyard brick prices will tumble and "we will be able to sell cheaply because we will be concerned not so much with making a profit as with supplying brick cheaply and promoting building construction."

Noonan further has said that: "They are sure their action in the near future will reduce the cost of buildings in San Francisco and will prevent the brickmakers in the future from withholding brick from the market for the purpose of inflating prices or to coerce the labor unions into accepting the program of greedy contractors and material men." The union plans to spend a half million dollars on the yard, according to announcement and work will commence within the city limits on a site upon the arrival of James P. Duffy, third vice-president of the international union.

The California Pottery Co., half million dollar corporation, with an expected volume of business amounting to a million dollars a year, is establishing a plant at Mercer, Cal. Fifteen thousand dollars worth of machinery is in transit for the new plant and within a few days the building materials are expected to be on the ground.

Within the next ninety days the big plant will be in full operation according to announcement. Articles of incorporation have been filed in the county clerk's office. At a luncheon of the Boosters' Club at the Hotel El Capitan, five business men told Mercer business men of the plans and purposes of the California Pottery Co. Officials of the new Mercer company are: F. A. Costello, president; H. J. Crow, in charge of the Fresno, sales yard; E. A. Forde, sales manager; J. F. Creegan, secretary; P. Mehan, superintendent of the works, and E. R. Hoerchner, attorney for the concern.

The Refineries Clay Co. has also filed articles of incorporation in Los Angeles with the following directors: Esther Norberg, Cleveland Schalitz, Boyd Comstock, M. B. Tyler and E. L. Cudmore, all of Los Angeles. Capital stock is to be $150,000.

C. F. Gross has brought suit in Oakland for $60,000 against the California Brick Co., and its stockholders for alleged removal by the defendants of $60,000 worth of property after the plaintiff had become owner of the premises.

Suit was begun last week in the Superior Court, Modesto, Cal., by the Southern Pacific Railroad Co. against the Modesto Pressed Brick Co., to force them to convey the property as far as they are able in the North Industrial Addition of Modesto to the railroad. According to the complaint the brick company agreed to sell the large tract of land for $20,000. Part payment was said to have been made by the plaintiff when it was found that only a part of the tract was clear. After deducting $2,000 for the land not included because of alleged obscure titles, the railroad was refused the rest of the property according to their statement.

GOOD ORGANIZATION WORK.

IN THE COURSE of a speech before a meeting of bankers recently, J. H. Degrees, on the subject of organized effort, said that if an organization is to be sound, "It must be based upon the study and education which brings understanding. Such a study and the dissemination of information for educational purposes should be a major element in the effort of all service organizations concerning such subjects as are reasonably related to their basic purposes.

"The organizations which have this conception of their functions and which are truly representative, are entitled to and will have an increasingly profound influence upon all measures to which they have given such attention. The day is disappearing for the autocratic organization with a high-sounding and comprehensive title, which, though it may have a considerable membership, represents in its operations only the arbitrary judgment of the few men who at the time may have it control.

"The day of the 'put over' organization is gone."

While in this particular instance the thought was directed at special organized effort, some of the ideas advanced are fitting here as a prefixed reference to the National Brick Manufacturers' Association, the efforts of which have been toward progress through education and enlightenment.

A bit farther in the same talk the remark is made that it should be understood by all commercial and trade organizations that if a project is not for the good of the public it is not for the good of the business. This had reference to legislative projects, probably, but the same logic applies in industry and commerce. That kind of effort which leads to better methods and to better economy in manufacture and distribution, and to superior products, in its final anlysis, benefits the public as well as the industry and eventually receives the public approval instead of condemnation. That is the kind of effort the N. B. M. A. has consistently sought to put forth.

Ever now and then in contemplating efforts at promotion work we are impressed with the thought that too much time and effort is wasted in counter propaganda between rival offerings for a given purpose. A little more getting together of rivals of this kind should result in a better use of their advertising and less confusion of the public mind.

TO DETERMINE THE QUANTITY OF BRICKS IN A CIRCULAR KILN CROWN.

THE HEEL OF THE CROWN may be a simple skewback or be built of with fire brick wedges as shown in the illustration.

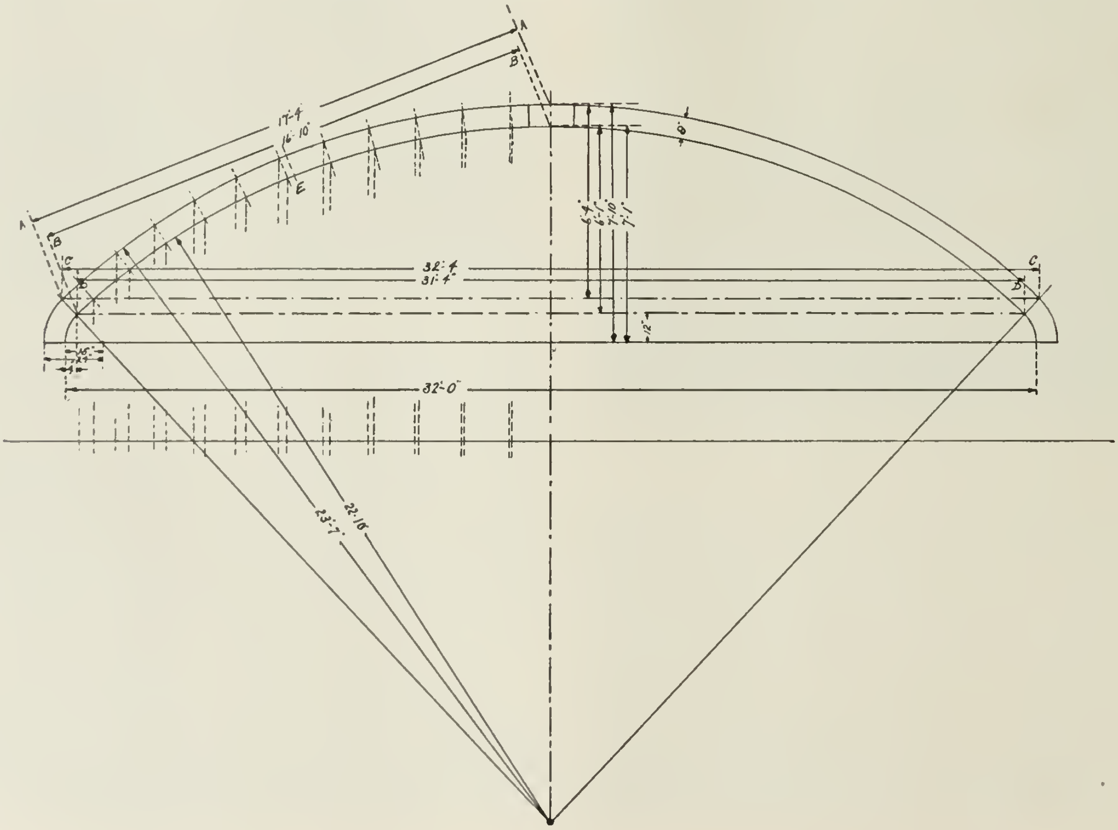
Our problem starts on top of the heel. The sketch shows a 32 ft. diameter crown. The diameter of the outer circle of the crown base where it rests on the heel is 32 ft. 4 ins., and that of the inner circle 31 ft. 4 in. The first step is to determine the length of the crown arc spanning the kiln. The respective chords of the half arcs are 17 ft. 4 in. and 16 ft. 10 in. The length of an arc is determined from the formula,

$$L = \frac{8AA - CC}{3}$$

Using this formula we find the length of the outer arc to be 35 ft 5 in. and that of the inner arc 34 ft 5 in. The difference is 12 in. and this difference in the lengths of the two arcs must be lost by the use of wedges. If we use No. 1 wedges, which are 2½ in. thick at one end and 2 in. at the thin end, we gain one-half inch with each course of wedges, and there must be 24 courses or 12 rings of such wedges to gain the 12 in. above determined. The outer arc, divided by the thickness of a standard brick plus the thickness of a proper mortar joint, gives us 162 courses, or 81 rings of bricks to fully turn the circle. Practically every seventh course should be laid with wedges. Laying off these points on the circle, we get the center lines of the several rings of wedges.

Measuring from each of these points, preferably on the inner arc, to the vertical center of the kiln, taking the sum of these meeasurements, multiplying the sum by 2 ft., we get the total length of all the wedge rings. Reducing this to inches and dividing by $\frac{37}{8}$ (the width of a brick plus ⅛ in. mortar joint) gives us the number of No. 1 wedges which in the crown illustrated amount to 1,570.

A shorter method is to find the center of the half arc at "E" and take this ring as the average. We determine the circumference of the base circle, divide by the width of a single brick plus the mortar point and multiply the result by



the number of rings of wedges which in this instance is 11.

An approximate estimate of the number of standards and keys is determined by multiplying the number of wedges by 6 since each wedge course is the 7th course. This method gives us 9,425 standards and keys.

A direct method of determining the number of bricks in the crown above the heel, including wedges and keys, is to determine the convex surface of the crown. The formula is, S = ht of the crown x the circumference of the great circle.

The rise of the crown, taking the outer circle, is 6 ft. 4 in..

The radius of the crown is 23 ft. 7 in., and with this radius the circumference of the great circle is 148 ft. 3 in.

The product (value of S) in round numbers, is 939 sq. ft. On the assumption that the ends of the bricks are 4½x2½in. plus ⅛ in. mortar joints, there will be 11.85 bricks per square foot, or a total of 11,127 bricks in the crown above the heel, without deducting for the central manhole nor for the cooling vents. Deducting the wedges as previously found, leaves 9,557 standards and keys.

The number of keys is not so easily determined. The only accurate way is to project each course of brick to a horizontal plane and determine the inner and outer circumferences in the same manner as that for the wedges. This is, of course, too tedious. A close approximation is to project the wedge courses, for which we already have determined the total length of the circumferences for the outer circle, and determine the total of the circumferences of the inner circles. The difference between these totals in the crown being estimated is 449 inches.

If we use No. 2 keys, which are 4½ in. wide at one end and narrowing to 3½ in. at the other end, we would require 449 keys in the wedge circles. Since there are six courses of standards to each course of keys, we will require 2,694 keys in the standard courses. The wedge courses are not keyed.

Collecting the quantities estimated, we have:

1,570	No. 1 wedges.
2,694	No. 2 keys.
6,863	Standards.

In order to break all joints, soaps should be used with the standards but the quantity of soaps cannot be closely estimated.

One will not be far wrong if he figures the soaps at 12 per cent. of the keys and standards, or 10 per cent. if he wishes to be under rather than risk having any soaps left over. On the basis of 12 per cent. our kiln will require 1,146 soaps, equivalent to 573 standard bricks.

In the crown shown we use eight courses of No. 2 wedges in the heel, which turn a 30-in. circle. Taking the center of the small arc as the average, and determining the circumference, we have the data for the number of bricks in one course, and the eight courses in the crown in question will require 2,176 No. 2 wedges.

The total requirement for the crown shown, is as follows:

2,176	No. 2 wedges in the heel.
1,570	No. 1 wedges in the crown.
2,694	No. 2 keys.
6,263	Standards.
1,146	Soaps.
13,849	Bricks total.

A crown can be built without wedges, keys, and soaps, but it is not as substantial as one properly built.

The purpose of this article is above fulfilled, but we wish to add the suggestion that in building a kiln crown, it is a good plan to slightly peak the crown in the center. One should start back four or five feet from the center and carry up the brick work tangential to this point on the curve.

This will peak the crown six or more inches in the center, and also eliminate the two central courses of wedges.

CAREY P. ELLIS.

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.

THIS SECTION OF THE country is now approaching a season of decline in building and construction which usually comes with the cold season. Up to November the weather has been unusually warm and favorable for outdoor work and advantage has been taken of this situation in starting on new building, alterations and various other improvements. Wisconsin clay products plants have also been able to operate without the hindrances of extreme cold, freezing or snow and production has been going ahead to take care of all needs. It is probable that these favorable conditions will continue for several weeks more, according to present indications.

One of the features of the local building situation this year is that although the number of building permits issued in Milwaukee for 1920 promises to set a new record, the aggregate value of construction work shows a marked decline over last year, according to William D. Harper, building inspector. A considerable number of the permits issued are for repairs and alterations on structures already built, while a large number of garages are also being erected. According to official estimates, the aggregate value of 1920 building in Milwaukee will fall at least $1,000,000 short of the 1919 total of $23,000,000. During the first ten months permits issued this year numbered more than 200 above the figures for the corresponding period last year. The total amount of the permits issued by the building inspection department for October was $1,416,299, of which $977,952 was for work actually classified as buildings.

The spring of 1921 will open a boomer building year, according to prominent men connected with building materials and construction companies. Operations for 1921 will be four times as extensive as they were this year, in the belief of Building Inspector Harper.

The increased demand for brick and other clay building products is looked for because lumber and some other items have shown an appreciable decline in prices. Lumber is not the major factor in building that it used to be, but with prices coming down people will be more inclined to begin building operations and consequently the use of other building materials will be greatly increased. Labor and material problems are expected to be greatly lessened next year, while transportation difficulties are already being overcome to a great extent. In fact, the entire situation is looked at from the most optimistic viewpoint and unless all signs fail to materialize, 1921 will prove to be a big year.

Another indication of the favorable outlook is that the clay producing companies of this state are making plans for extensive operations next season. The Shape Brick Co. has started construction work on its large new plant at State and 47th streets, just west of the city limits near the old Burnham Bros.' yards. Contracts have been let for a structure to be 70 by 140 feet in size, with brick curtain walls on a concrete foundation, with steel sash and other modern fireproof materials. This work will cost approximately $25,000.

News from Bagley, Wis. has it that a new enterprise is going up across the Mississippi River below Clayton, Iowa. This plant is a brick and tile factory and it is expected that production of these items will be moving out of the plant this fall.

With every indication pointing to materialization of proposed plans for a great number of large building throughout the state in spring, the clay products industry of Wisconsin is now at planning for extensive operations. The coming season promises to be a most prosperous one.

A. BADGER.

ENCOURAGING THE HOME BUILDING

Some Pertinent Facts Regarding This Very Important Subject Which Point the Way to Success in Carrying on a Campaign for Encouraging Home Building.

THERE IS NOW IN process of development plans for own your own home expositions and other displays of similar character which promise to make this winter a record one in the matter of efforts to encourage home building and to promote residential construction generally so as to solve the housing problems of the country. Already the plans have taken definite shape for big expositions in Chicago, New York, Milwaukee, and a number of other leading cities of the country. Indeed the indications are that in every large city throughout the country there will be put on an exposition of some kind to enliven the interest in home building and home owning. Meantime various divisions of the structural material industries are actively at work with advertising campaigns, plan book schemes, and a world of propaganda to give the interest definite form and promote the welfare of the material offerings. Among the latter activities we find various branches of the clayworking industry, including the Hollow Building Tile Association, the American Face Brick Association, and the Common Brick Manufacturers' Association busily at work on plan books and advertising matter to promote better and more permanent building, and to serve their particular trade lines by awakening public interest in them to broaden the consumption possibilities.

Shaking Up the Home Spirit.

These things are good and there never was a more fitting time for putting on a country wide campaign to promote home owning and home building. Moreover, there never was a time when there was more promise of fruitful results from efforts properly put forth along this line. There is plainly a need for more residential construction and it is easily evident that the more of the individual home owning in this connection the better it will be both for the country as a whole and the individual home owners. What we should be seeking for now is a careful analysis of the situation from all angles for a clear understanding as to just what additional lines of effort may be followed to round out the work and make it most effective. Efforts to get some light of this kind by diligent inquiry brings some conflict of opinions, and some questions of where and how to arouse the most interest among the different people putting forth the effort to promote home building.

Financing as a Major Factor.

One conception is that the more important needs of the day in carrying out an effort to promote building is that of financing the home builder, or providing the money with which he can build on some long time plan that will make home ownership in its final analysis as easy as paying rent. One good line of argument is that if you can go to the individual workman or professional man who does not own a home and say to him that you have arrangements by which he can finance the building of his home and pay it off with weekly or monthly payments extending through a period of ten or twenty years, right then you have the argument that would start him to home building. Showing the prospective home builder a lot of beautiful pictures and detail plans of houses may interest him and awaken a desire, but it does not result in business unless the man either has the money with which to build a home or knows where he can go to get the money. This is a well known fact. Another well known fact is that very few people have the money in hand with which to build a home. They may and should have a part of it, but probably 90 per cent. of the homes are built with anywhere from 50 to 75 per cent. of the capital required for the building borrowed. This being a fact there is no question but what one of the big jobs in connection with the successful promotion of more home building is that of providing ways and means to finance the work, or rather to finance the home builder. Making the financing easy, therefore, it may be argued is the one line of work which will offer the most encouragement to additional home building.

Building and Loan Associations.

One of the biggest and best agencies for financing of this kind and for the encouragement of home building is made up of building and loan associations. These not only furnish a fund but they encourage habits of thrift and saving, and they have proven themselves the best single agency in the promotion of home ownership. Naturally, therefore, the need for more home building is an argument in favor of even greater effort to organize and develop more building and loan associations. This is a work the lumber people, especially the retail dealers, have been much more active in than the producers and handlers in other lines of structural material. A more active interest by other lines in this work will help the good cause along.

This one agency will hardly serve all the needs, however, unless it can be expanded considerably. There has been some legislative action planned, looking to the re-discounting of building and loan association notes through federal reserve banks, or farm loan banks, which merits further attention. Some governmental reserve source for handling these obligations and increasing the fund available for loans through this agency will help wonderfully in developing home building.

Insurance and Trust Funds.

Meantime there are other agencies for financing home building, some of which already exist and some of which may have to be set up. There is a noticeable disposition among insurance people to invest surplus money in small mortgage loans on homes and on farms, and it is probably that this source of financing can be augmented considerably by attention to the matter through proper agencies. Then there are banks and trust companies with funds available for real estate bonds and mortgages which in some instances call for putting the obligation in some special bond form, and preparation to comply with these requirements and make such funds available in good preliminary work to promote home building.

Community Financing.

Finally there is a chance to set up home financing agencies among the business men of each community. It is good for the business men of the community to have substantial citizens owning their own homes, and to insure this kind of a citizenship these same business men can afford to give some time and invest some capital to provide a fund for financing home building. The general idea here is that of organizing a home financing company and having various business men subscribe to the stock and furnish the capital which will be loaned to home builders on substantially the same basis as loans from trust companies and building and loan associations. This is the agency which offers opportunity for active development during the winter months so as to be prepared for finance building in the spring, and it will take something of this kind to round out the campaign to promote home building and home owning. To awaken desire is only part of the program and the satisfying of that desire which is the other part included in the problem of financing, which after all, is the nub of the whole situation in promoting a great era of home building.

A Discordant Note.

This seems to the writer like good logic, but when it was tried out the other day on a salesman handling building material and selling to the retail dealers, with the suggestion that the salesmen of the country could do a great mission work with the idea of talking it up among the retail dealers of the country, it brought a discordant note. The salesman said that with due respect to labor, it was his opinion that the average workman or laboring man really didn't want a home very badly or he could arrange to build it. His argument was that a good, dependable worker for some factory or business institutions, if he wanted to build a home and had saved a little money to start with, could go to his employer and get assistance in financing the undertaking. The fact that very few of them did this impressed him with the idea that they thought it was cheaper to pay rent, or were indifferent to home owning and would rather have a new automobile or a lot of jewelry to flash.

Rounding Out Promotion Effort.

There is something to this viewpoint, but not as much as this salesman seemed inclined to make it out. There are some who are indifferent to home ownership, but they are the exception rather than the rule. Home building is a natural instinct to the normal human being and home ownership is the thing naturally looked forward to by the average man when he gets married and starts to raise a family. Some may have been turned aside through the argument that it is cheaper to pay rent, but rent raises and the scarcity of desirable renting property the past year or two have put the quietus on this kind of argument. It should be easy enough to interest men who have paid rent in the past in home building to provide for the future, and it is for awakening interest and arousing desire that the expositions and the general campaign is planned. In other words, there is a service for it in awakening the home building desire and giving it specific form. Then follows the problem of putting the idea over by providing ways and means of financing the building. The argument that any employe who desires to build can get help from his employer is too general. There are specific cases where employers help employes, but the average employer is not able to finance all of his employes, so the amount of assistance he can render of this kind is limited. There are instances known to the writer where employers have financed employes in home building to the extent of their ability, and other instances where local individual merchants have carried out the same idea. The chance for further work here, as pointed out above, is for merchants, manufacturers and other employers and business men in each community to get together, pool their efforts and their finances, get their banks interested, and seek to interest outside money in promoting a company or agency for financing home building under proper supervision and regulations. Such an undertaking should not be handled recklessly. The prospective home builder must show thrift and a savings instinct, and put by a little money to start with, then they will help him out. Some effort given to this kind of work during the winter seems necessary to properly round out a campaign for encouraging the home builder because in the final analysis it is the money end of it that is the dtermining factor in developing the building campaign.

CLAYS OF THE NETHERLANDS.

The ceramic industries of the Netherlands have been celebrated from the earliest times. In regard to raw material no country is better fitted for the manufacture of earthenware. The valleys of the Rhine, Waal, Maas, Yssel, and their tributaries are lined with a stiff river clay, as "fat" as the potter can desire.

Written for The Clay-Worker.

CINCINNATI BRICK AND BUILDING NEWS.

THE BUILDING PROSPECTS here for the remainder of the year do not give promise of very much activity. The past month has seen an increase in the demand for building materials of all kinds, and the demand for clay products, of course, has been given the same kind of reception. There is a large amount of work planned, the architects offices being very well supplied with plans for various kinds of structures, but the high cost of materials, the uncertainty of the work being completed and last, but by no means the least consideration, pertains to the high wage demands of the workingmen, and of their indifference as applied to doing their work with anything like a real show of consideration.

This has become one of the most serious matters that have to be faced both by the brick men and the contractors. If the workers will not carry out their part of the work as they should, and their demands become so unreasonable that it is out of the question to make any real progress there is nothing to expect but a further decline in the demand, and there will be almost a standstill to the building industry. So the matter rests to a great extent in the hands of the workers, and they are going to either make matters better or worse.

In commenting on this matter before the Cincinnati Real Estate Board recently, Walter T. McGarvey, a brick contractor, stated that there is about $18,000,000 worth of work now lying in the architectural offices which can be placed on the market by the owners being assured that staple conditions will prevail in the building field. In commenting on the situation with regard to building here he said:

"One thing that we all want is that both sides in the building field realize that it is to their advantage to bring conditions to a satisfactory condition. We must eliminate the old idea of getting while the getting is good. The better element in the building field has realized this condition. Recently, at Cleveland, at the convention of the Bricklayers' International Union, one of the leading questions under discussion was whether are not to refrain absolutely from seeking further increases of wages and make a concerted effort to increase production.

"There is today a tendency toward a gradual reduction in the costs of building. To begin with, there are indications of better efficiency with the building mechanics, which means something."

Blair Bannister, who was present at the meeting representing the home life insurance plan of a national corporation, gave his hearers a detailed plan of this method of financing the purchase of a home and stated that if the people of this city were interested in the idea he would guarantee $1,000,000 would be loaned in local real estate for home building.

There has been a strike among the electricians and the plasterers for higher wages, this causing somewhat of a tie-up of construction work, and it is intimated that the carpenters are to go out before long. So the work that might be carried on is held up on account of these labor agitations. The chances are that there will not be very much progress made this year, but the coming year will no doubt be of the flattering kind as pertaining to the building industry.

The brick plants are closing down for the winter months, the demand for common brick being very light will not cause any great inconvenience in the lack of operation here. Prices on brick are not likely to be any lower soon, and while there has been a little shading of prices on some other kinds of clay products, these are not of sufficient moment to cause any decided change as yet. The higher freight rates are going to obviate against anything in this way of any weight, and unless the plant can be operated at a lower cost there does not appear to be very much promise of any betterment in this way, soon.

The month of October in the matter of building permits showed a very gratifying improvement, compared with the same period of a year ago, and for that of two years ago. The report of Building Commissioner George R. Hauser shows that during the month there were 953 permits issued, at an estimated value of $1,210,550, while the same month in 1918 there were only 804 permits issued, valued at $331,775, and in 1919 there were 1,032 permits issued with an estimated valuation of $946,670. The ten months of the year show that there were 10,390 permits issued, with an estimated cost of $12,117,597. During the first ten months of 1918 there were 8,421 permits issued, costing about $4,318,478, and in 1919 there were 10,280 permits representing $8,452,305.

More detailed plans regarding the new plant to be builded by the Wheatley Pottery Co., at the intersection of the Cincinnati, Lebanon and Northern Railroad and Lester Road, in Pleasant Ridge, shows that slightly more than an acre of ground will be occupied by the plant. The exterior of the plant will be of the ornamental type, the building to be fireproofed and the kilns will be hidden from the public road, these being builded in a recess within the building. The front part of the plant will be two stories high, with brick exterior, to be paneled with material made at the pottery. The building will contain 45,000 square feet of floor space, the size being 234 by 1,225 feet. The company has purchased six acres, so that in this way it will be able to care for all future increases in the matter of buildings. The plans have been posted by the architects, Rendigs, Panzer and Martin.

George Schoor, Second and Walnut streets, will build for the market five modest dwellings in the upper end of College Hill, in the Clovernock subdivision, each on an acreage plot.

The Busse Brick Co. is about to close down its plant for the winter months. The demand for common brick of late has been very much off and there will be little doing for some months now.

The Evans Builders Co. say that the call for clay products has been very slow and while prices are just a little lower than they have been on some lines, the reductions have been very slight as yet. The indications for the remainder of the year are not very good as far as can be noted now.

Business has been dull with the Cincinnati Clay Products and Supply Co., and the demand for brick and other clay specials is off now. The brick plants of this company are to be closed down for the winter months, and there is nothing to indicate any change for the better for the remainder of the year. The outlook, however, for the new year seems to be very good, and there is reason to feel that there will be a better demand then.

The report at the office of the D. C. Shorey Brick Co., is to the effect that the demands have been very good within the past month, and presents sales are very fair for the season.

The Purcell Brick Co. note that the call for brick has been slow, and that the market has been very much of the indifferent kind of late. The immediate future does not offer anything noteworthy.

Business has been dull with the F. E. Grand Brick Co., and sales are only fair. There was a little more inclination to activity of late, but nothing out of the ordinary. Prospects are not bright for the near future.

The Builders Material Co. says that there is little to hope for in the way of a demand for the present year, with labor agitations so much in evidence. The situation is therefore not of the promising kind for the present year.

CINCY.

THE AMERICAN ENAMELED BRICK AND TILE COMPANY'S EMPLOYES TAKE FIRST PRIZE IN ANNIVERSARY DISPLAY.

THE ACCOMPANYING PHOTOGRAPHS were taken of a float which was entered by the employes of the American Enameled Brick & Tile Co.'s Plant at South River, N. J., on the occasion of the anniversary of the founding of that town, and the first prize cup won by them.

The float depicted the manufacture of Enameled Brick during the various stages of the process, from the raw clay, to the finished product. The small kiln emitted real smoke and proved very interesting to the visitors. Miniature brick were distributed from the float as souvenirs of the occasion.

The First Prize Cup Won by the Employes of The American Enameled Brick and Tile Company.

The general scheme was entirely worked out by the men in the plant and manned by some who have been in the employ of the Company for twenty years and over.

South River, N. J., was founded in 1720, and has many historical associations.

The clay industry was started in 1825 when a small pottery, manufacturing stoneware, was established. Common brick yards soon followed and later the Refractory, Fireproofing, and Enameled Brick Industries. The town is situated in the heart of the Raritan Valley which contains some of the finest clays to be found in the country.

WITH THE POTTERS AND TILE MANUFACTURERS.

THE PHILIPS-HARPER CO., of Trenton, N. J., have secured another large contract for hollow tile to be used in hotel construction. They have recently booked the contract for the hollow tile for the Hotel Manhattan, New York City, which is undergoing remodeling into a modern office building. The tile will be manufactured in the company's plant in the Raritan River Section. This company is gradually blooming into one of the largest clay product dealers in the East.

It is the intention of the Erie Floor & Wall Tile Co., of Erie, Pa., to construct a modern tile plant and start the manufacture of ceramic floor and wall tile. The company has recently been incorporated with a capital of $75,000.00. Mr. A. G. Walker, of Erie, Pa., has been elected treasurer of the concern.

The New Jersey Tile Company, Trenton, manufacturers of vitrified floor tile, have completed plans for the erection of a new and modern plant to be located on Brunswick avenue. The main building will be 60 to 200 feet, which is to be equipped with the latest machinery for general production, a power plant and three kilns. In the near future these people contemplate the extending of a railroad siding to their plants. Bids for the job are now in the hands of contractors and it is expected that building operations will start shortly.

The Attractive Float That Won First Prize for the Employes of the American Enamel Brick and Tile Co., South River, N. J.

According to the officials of the U. S. Encaustic Tile Works, Indianapolis, Ind., it is to double its capacity within a few months. New kilns, buildings, and modern machinery will be added. The company contemplates the installing of two new power tile presses, each having a capacity of from 1,400 to 1,500 sq. feet of 1-inch hex. per day. It has been estimated that each of these power presses will be equal to the capacity of three of the old type hand presses.

The city of Baltimore has recently announced the organization of two new feldspar companies, i. e., the Maryland, Flint and Spar Co., of Bel Air, Md., and the Patapsco Feldspar Co., of Baltimore, Md. Both companies are to carry on the quarrying, grinding and marketing of flint, feldspar and other affiliated minerals.

Portland, Maine, announces the arrival of the steamer Kurona with about 2,000 tons of imported china clay from England. It is expected that several more steamers will arrive shortly. This has been the first arrival of china clay for some time.

The Fernando C. Mesa Co., of Irvington, N. J., have recently been formed with a capital of $1,500,000.00 to manufacture porcelain products for use in the electrical world. The company is headed by Mr. James Mango, of Cuba.

NEW PORCELAIN COMPANY IN NEW JERSEY.

The Summit Porcelain Company, of Summit, New Jersey, has been recently incorporated with the following officers: Mr. E. F. Anderson, President; Mr. Anthony Comfort, Vice-President, and Mr. E. C. Dedroux. The amount of approximation was approximately $130,000.00. They will begin operation immediately after slip-house and other machinery is installed. There is all reason to believe the company will prosper as Mr. Comfort will handle the ceramic end of the business. He is well-known to the clay trade having formerly been connected with ceramics in Trenton, and recently resigned as General Manager of the F. C. Mesa plant at Irvington, N. J.

MOUNT CLEMENS POTTERY CO.

A fact that will be of interest to the clay game is that the Mt. Clemens (Mich.) Pottery is controlled by the S. S. Kresge 5c & 10c Co. They manufacture exclusively for these people who consume their entire outfit. They are now installing a new slip-house which will be in operation within a short time.

BUILT-IN FIRE PREVENTION.

One of the best ideas advanced in connection with fire prevention and fire prevention day exercises is that of building in fire protection when structures are erected. In a word, the best way to prevent fires is by built-in protection, by constructing our buildings of material which will not burn and which will stand as a protection against fire within itself instead of being a fire trap. This can be done readily by building with brick and tile.

THIRTY-FIFTH ANNUAL CONVENTION TO BE HELD IN NEW YORK CITY, JAN. 31 TO FEB. 5, 1921.

Common Brick Manufacturers' Association and the National Brick Manufacturers' Association to Meet for Second Time in Annual Convention

FATHER KNICKERBOCKER again bids the members of the clay crafts to assemble within the gates of his greatest city and promises all who do so at the appointed time, January 31 to February 5, 1921, a most royal welcome and a feast of good things such as no other municipality in all the world can offer. Broadway is more brilliant today than ever before and the avenues of pleasure to which it leads beckons to the members of the N. B. M. A. and all of the affiliated organizations, bidding them come and enjoy a week of recreation intermingled with shop talk, and interchange of trade lore which will leave every participant far better equipped for the ensuing years' business than he could otherwise hope for.

Members of the parent organization will remember with pleasure the delightful week spent with Father Knickerbocker in March, 1917, when for the first time in its thirty-odd years of meandering the brick and tile manufacturers of the United States and Canada gathered in New York City. They learned at that time that the greatest city in the world is really a fine convention town, in spite of the many attractions that lead visitors to go sightseeing both day and night. Notwithstanding all this, the sessions of the convention were well attended and the social functions ditto.

The Common Brick Manufacturers' Association.

Our thirty-fifth annual convention is to be held jointly with the Common Brick Manufacturers' Association of America. A most interesting program is in course of completion and it has been agreed to divide the time on a fifty-fifty basis, so that all in attendance can attend the sessions of both organizations.

Beginning Monday there will be separate meetings of the Executive Officers of each Association. On each of the following days there will be but one session of each Association. The first regular session open to the public, as usual, will be held Tuesday morning. It will be called to order by President Hammond at 10 a. m., and the usual first session's business of the N. B. M. A. will be transacted. At an agreed time President Hammond will turn the gavel over to President Schlake, of the C. B. M. A. when the first open session of that organization will be held, thus the day's session of each Association will be completed without intermission.

Wednesday the order will be reversed, the session will be opened at 10 a. m. by the C. B. M. A., and at its conclusion the N. B. M. A. will begin its second session.

The following day, Thursday, the order will again be reversed, the N. B. M. A. starting the deliberations, and the C. B. M. A. closing with probably its final session, leaving Friday for an exclusive N. B. M. A. session. This is an arrangement which undoubtedly will prove eminently satisfactory to the entire membership of both organizations.

The social functions will be the customary Smokerette Tuesday evening, when all the visitors, including the ladies, will be guests of the Local Committee. The Annual Banquet will be held Thursday evening, on which occasion there will be some unusual talent which will make it a most memorable event. The ladies will be present, of course.

Pennsylvania Hotel Headquarters.

The famous Hotel Pennsylvania will be headquarters during the Convention. It is the world's largest hotel, but more important and interesting than that is that it is a great hotel of character and distinction, the New York home of many thousands of discriminating travelers who want the best the world's greatest city can provide, and they find it in the Hotel Pennsylvania. It has twenty-two hundred guest rooms, each with a bath, and is directly opposite the New York terminal of the Pennsylvania Railway system. In fact, it is connected with same by a subway, so visitors do not have to take the risk of crossing a busy thoroughfare, but instead may call a "red head" to lug the luggage and stroll leisurely to the spacious and beautiful lobby, where polite attendants will receive and show the way to the room in which will be found tub or shower bath and fresh iced drinking water which flows at the touch of a button. In every bed room, whatever, its price there is a telephone, a built-in-wardrobe, provided with coat-hangers, a full-length mirror, an electric reading light attached to the head of the bed, and a portable electric light on the writing desk—besides the lamp over the dressing table mirror and a ceiling light. In the Pennsylvania a morning paper is slipped noiselessly under your door while you sleep—and there is no charge for it in your bill. Every room in the Pennsylvania is an outside room, with an abundance of window-light and air.

The Pennsylvania is as nearly absolutely fire-proof as a building can be, being built of brick and tile, metal and stone, with wood eliminated to an extent which would have been impossible a few years ago.

Reasonable Hotel Rates.

The rates at the Hotel Pennsylvania are very reasonable considering service and equipment. There is a rate card in every room, giving the price which ranges from $4.00 for a single room to $6.00 for a room for two, with double bed. If separate beds are preferred, the rate will be $7.00 and up according to location. Where three or four persons occupy a room together with single beds the rate will be $10.00 and $12.00 per day per room.

One of the praiseworthy general features of this biggest hotel is the variety of accommodations from a luxurious suite of many rooms to a small single room. Also one may choose among many restaurants, and every facility is provided for entertaining in one's own sitting room, or in a private dining room.

The Pennsylvania is located conveniently to the shopping districts and the theatre districts, and the business district are easily reached by subway, which has a station in the hotel. Bus lines and surface cars pass the door and the elevated railway is but a block away.

The Last Word in Hotel Convenience.

It would take too much space to even enumerate the ingenuous devices which add, in scores of ways, to the comfort of the guests of the Hotel Pennsylvania, but a word should be said about the "servidor," which is a device which eliminates contact with servants at the bed room door. It is a compartment built into the door of every guest chamber—a box-like compartment with two doors, one on the bed room side and one on the hallway. When the guest wishes to send out clothes to be pressed, he puts them in the Servidor; the servant who calls for them takes them out through the hallway side door without opening the bed room door or seeing into the room. If the Servidor is not closed on the bed room side, the outer door cannot be opened, so there is no possibility of entrance into the rooms through the Servidor.

All Affiliated Associations Invited to Participate.

The National Clay Machinery Manufacturers' Association will hold its annual meeting during the week, as will also the local sections of the American Ceramic Society, the common, paving and face brick manufactuers, and the makers of sewer pipe, hollow tile and terra cotta are invited to participate, thus insuring a representative gathering of all the clay products manufacturers of the nation.

Those desiring further information as to requisite of membership in the National Brick Manufacturers' Association, or any other detail of convention arrangements, are requested to communicate with the Secretary at Indianapolis.

THE EXECUTIVE COMMITTEE,
Wm. K. Hammond, President.
Theo. A. Randall, Secretary.

A Great Brick Structure.

The Pennsylvania Hotel, New York City.

CONVENTION DATES.

The American Face Brick Association, French Lick Springs, Ind., December 1, 2 and 3. R. D. T. Hollowell, 110 S. Dearborn St., Chicago, Ill., Secretary.

The Face Brick Dealers' Association, French Lick Springs, Ind., December 1, 2 and 3. M. W. Montgomery, 406 Tower Bldg., Chicago, Ill., Secretary.

National Paving Brick Manufacturers' Association, French Lick Springs, Ind., December 7 and 8. Maurice Greenough, Engineers Bldg., Cleveland, Ohio, Secretary.

Canadian National Clay Products Association, Toronto, Ont., January 25, 26 and 27. G. C. Keith, 435 Grace St., Toronto, Ont., Canada, Secretary.

National Brick Manufacturers' Association, Pennsylvania Hotel, New York City, January 31 to February 5, 1921. Theodore A. Randall, Indianapolis, Ind., Secretary.

Common Brick Manufacturers' Association, Hotel Pennsylvania, New York City, January 31 to February 5, 1921. Ralph P. Stoddard, 1300 Schofield Bldg., Cleveland, Ohio, Secretary.

American Ceramic Society, Deshler Hotel, Columbus, Ohio, February 21, 22, 23 and 24, 1921. Prof. Charles F. Binns, Alfred, N. Y., Secretary.

CANADIAN CLAYWORKERS TO MEET AT TORONTO.

The annual convention of the Canadian National Clay Products Association will be held at Toronto, Ontario, January 25, 26 and 27. Gordon C. Keith, the popular and energetic secretary of the Association, has the program well under way, and writes that inasmuch as they now have the biggest membership of any year in their history, that they expect to have the largest and most enthusiastic convention yet held, and to have a goodly number of brick and clay men from this side of the line present with them. We can echo the sentiment and trust our Canadian brothers will have such a good convention that it will whet their appetites for more, and they will just leave their grips packed and journey on to New York in time for the first session of the N. B. M. A. and the C. B. M. A. Tuesday, February 1, and stay throughout the week.

AMERICAN CERAMIC SOCIETY TO MEET IN COLUMBUS, OHIO.

The 1921 annual meeting of the American Ceramic Society will be held on February 21-22-23-24, at Columbus, Ohio, where the Hotel Deshler has been engaged as headquarters. The management of this new and commodious hotel has promised to reserve the ball-room and four other rooms on the same floor, so that the general meetings of the Society and the divisional meetings will be taken care of adequately.

Details of the entertainment are in the hands of the local committee, of which Professor A. S. Watts is chairman, and it is expected that the usual Section Q, or smoker, will take place on Monday night, with the banquet on Tuesday. Those who recall these delightful events at the Philadelphia meeting will not fail to be present this year.

The trips to be taken on the last day of the meeting will be replete with interest, as Columbus is situated at the very heart of the clayworking industry.

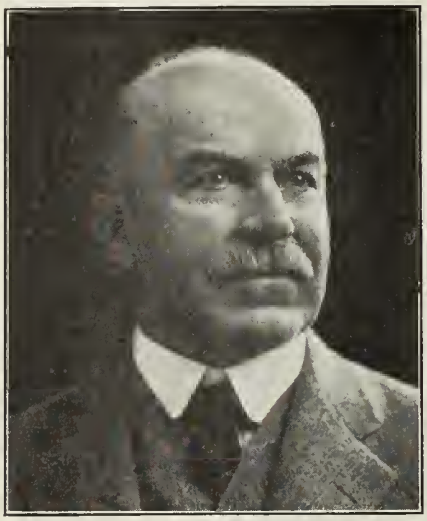
The literary program, if it may be judged by past experience, will be filled with papers of a high degree of excellence. The arrangement of the program is in charge of Mr. R. H. Minton, chairman of the Committee on Papers, and contributors should communicate with him.

THE PASSING OF R. G. EISENHART.

One of the Best Known and Most Successful Brickmakers of the Country Succumbs to a Stroke of Heart Failure.

THE GRIM MESSENGER summoned R. G. Eisenhart without warning October 27th. He was stricken fatally while standing in his office serenely contemplating a well deserved rest from business cares, having the day before completed the transfer of his interest in the brick plants which he had operated with unusual success for more than a quarter of a century.

In his death the brick industry loses one of its foremost advocates. A man of sterling qualities, simple in mannerism, yet keen in intellectual attainments, he wielded a great influence in local affairs, and as an executive officer of the National Brick Manufacturers' Association had become widely known to the brickmakers throughout the country. His service to the industry was unselfish and of inestimable value to the craft, no member of which ever appealed to him for information in vain. He was a wise counsellor and a steadfast friend.



R. G. Eisenhart

Mr. Eisenhart attended the convention of the National Brick Manufacturers' Association for the first time at Indianapolis in 1891, and was elected president at Boston, in 1903, and was a conspicuous figure at all the annual gatherings for twenty-nine years, a record of intimate interest and loyalty that was characteristic of the man.

He was the type of man in whom love of home and care of and association with his own loved ones was a primal passion. The beautiful Eisenhart residence, "Westmount," was the center of his interest.

A devoted member of the Presbyterian Church, his generosity in aiding the promotion of the better things of life was marked. His assistance in any cause he espoused seemed practically to insure its success. And of the kindly, genial nature that lay beneath the surface of the man and seen by those who knew him, printed praise must fail in the telling.

Mr. Eisenhart is survived by his wife, with whom he had spent the recent days planning the purchase of a winter home in Florida; by one son, Oliver D., equally well known as a successful man of business as the father, and by two daughters, Mrs. Gertrude Stowell, of Horseheads, and Mrs. William E. Davis, of New Haven, Conn.

Mr. Eisenhart, who was in his seventy-first year, moved from Shamokin, Pa., to Horseheads in 1890, where he purchased a small brickyard which, under skillful management, had grown to be one of the largest in western New York. Twenty years ago he acquired an interest in the Weyer plant at Elmira, and the plants were then consolidated and operated under the firm name of the Consolidated Brick Company.

The funeral occurred Saturday afternoon, October 30th, at 2:30 o'clock, from the Horseheads Presbyterian Church, of which he had been an active member for many years.

The Lesson of His Life an Inspiration.

Dear Randall:—

Close up! Another comrade in the front rank has fallen! A Christian soldier, fighting for the right, has been stricken by the hand of death! A loyal and respected member of the N. B. M. A. has been suddenly called to the his last home! A beloved friend, Mr. R. G. Eisenhart, has been taken from us!

We know that such a loss may happen any time, that we are all mortal, that one who seems the most vigorous may be the first to fall, and yet such an event always shocks us and saddens us and ever after, to some extent, affects the concord of our associations. Especially to our older members the death of Mr. Eisenhart is a distinct loss that will always be felt.

The lesson of his life in our Association should be known to the young men of our industry. We remember his first appearance in our conventions, his eager inquiries for information of the problems with which he was struggling, his successful solution of them and his many acknowledgments of his indebtedness to our Association for the benefits he had received. The N. B. M. A. had no more loyal member than R. G. Eisenhart, no one who opposed more vigorously the selfish schemes of its detractors. Though the highest honors of the Association were conferred upon him, yet he never sought preferment and was free from the petty jealousies exhibited by many. He believed in the N. B. M. A. and was ever ready to do anything to further its interests and purposes.

Mr. Eisenhart did not come into the N. B. M. A. to get help in the selling or advertising of his products. He had been a successful merchant before he was a brick manufacturer. He wanted help on the troubles that he was having in production and which, if not relieved, would cause his downfall. He came to the right place. The N. B. M. A. was organized primarily for just such purposes—to help its members to make better brick and to make them more economically. Now that we have separate organizations to promote a wider use of brick, uniform cost accounting, ethical methods of selling, systematic advertising, etc., let the N. B. M. A. stick to the main objects of a manufacturing organization.

Mr. Eisenhart's example should be an inspiration to us to make our Association of greater help to our industry, a more potent factor in the advancement of the art of brickmaking.

We shall miss Mr. Eisenhart more than we can express; we shall miss his vigorous support of our policies, his active interest in everything pertaining to the welfare of our Association, his cordial greetings and his genial good fellowship. We shall miss also the graceful presence of Mrs. Eisenhart, and to her our sympathy goes out in her great bereavement.

W. D. RICHARDSON.

Columbus, Ohio.

A High Type of Man One Rarely Meets.

My Dear Secretary:—

The announcement of the death of Mr. Eisenhart shocks me to silence. We of the N. B. M. A. have indeed lost a loyal friend. I but recently received some interesting letters from him which manifested an unlagging interest in the affairs of our Association. His love and loyalty was truly remarkable, covering as it did an average lifetime of active participation. He was a high type of man. One rarely meets his equal. We will sadly miss him and his family who by their gracious and kindly interest added immeasurably to the pleasure of our annual gatherings. My deepest and truest sympathy is extended to Mrs. Eisenhart and his loved ones.

Yours sincerely,
New York City. WM. K. HAMMOND.

R. G. Eisenhart a Golden-Hearted Gentleman.

My Dear Randall:—

I am shocked and deeply grieved at the sad news in your telegram just received announcing the death of our dear friend, Eisenhart. I am glad to know that you wired flowers in the name of the Association, and I am sending Mrs. Eisenhart a telegram expressing mine and Hettie's sympathy. One by one the happy links of the past are being broken, and we are reminded that time is fast moving for us all. Eisenhart was a most valuable member of the National Association. We shall miss his inspiring and wise counsel. He was indeed a golden-hearted gentleman, and I consider it a great fortune to have counted him as my friend. We shall greatly miss him at the convention.

Yours in sorrow,
Birmingham, Oct. 29, 1920. JNO. W. SIBLEY.

One Whose Advice Was Often Sought and Freely Given.

Dear Randall:—

Your letter announcing the death of Mr. Eisenhart was the first intimation I had of his passing away. In his demise we have lost a mutual friend and a co-worker always to be relied on in the N. B. M. A. His loss to the Association will be keenly felt. His advice was often sought, freely given and always to the point. In my judgment no member has done more toward the upbuilding of the brickmaking industry than did Mr. Eisenhart. He was highly regarded in the business world as an upright man in all business affairs generally. He will be greatly missed in the community in which he lived.

I have written Mrs. Eisenhart expressing my sympathy for her and the family.

Most sincerely,
Albany, N. Y. W. H. H. ROGERS.

There Are Few Men Like R. G. Eisenhart.

Dear Randall:—

You know I was telling you when you were out to see us that we were going to take an auto trip up through New York State and run out to see Mr. and Mrs. R. G. Eisenhart. We got to Horseheads Saturday, October 30th, 1 p. m., and found our dear friend, Mr. Eisenhart, dead, and the funeral was to be at 2 p. m.

We had not heard of his death; it was an awful shock to Mrs. Post and myself.

I tell you, Friend Randall, the N. B. M. A. has lost one of its best members. There are men, but few like Mr. R. G. Eisenhart. He will be greatly missed by all.

Yours truly,
Glen Head, N. Y. JOTHAM POST.

A Noble Character.

Dear Friend Randall:—

Your favor of the 29th received and reading therein the death of R. G. Eisenhart, of Horseheads, N. Y., has shocked me most terribly. I always considered him one of the strongest and most loyal members of the brickmaker's craft, and especially so to our N. B. M. A. He was one of those noble characters who drew friends near him. We shall inexpressibly miss his presence at our meetings hereafter. I, personally, loved Mr. Eisenhart, and prized his friendship most highly. His death is an irreparable loss to our Association, and will cast a gloom over our next annual meeting in New York.

Yours very truly,
Slidell, La. F. SALMEN.

Possessed of a Strong Personality and a Lovable Nature.

Dear Teddy:—

Your letter telling me of the death of our old friend, R. G. Eisenhart, is just received. Well, Teddy, it seems we must all go some time, but we all of the N. B. M. A. will feel that our old friend Eisenhart is the one that will be most missed. We will always think of him in loving kindness as we meet from time to time. His was a strong personality and a lovable nature, a rare combination.

I have written Mrs. Eisenhart, expressing as best I could, my sympathy for her and hers in this trying time.

Philadelphia, Pa. WILLIAM CONWAY.

Tribute From a Friend and Competitor.

My Dear Randall:

I was indeed sorry to have to notify you of the death of my good friend R. G. Eisenhart which occurred so suddenly on the afternoon of October 27.

For twenty years we have been competitors and friends and to know him as I knew him was to love him for his noble qualities which he exemplified in his daily life and dealings with others. His ideals were high and he practiced them in his daily life. He was a good business man whose word was as good as his bond. He was a big hearted, broad man who was always ready to consider his competitor and treat him as he would wish to be done by.

He will be greatly missed in the community in which he lived as he was good to the poor, a liberal supporter of his church and a public spirited citizen.

The National Association will miss him as he was a loyal member who has stood by the Association loyally for many years. There is perhaps no man in the United States whose advice was more sought or considered than his as he was one of the most successful common brick manufacturers in the United States. He often said that he owed it all to the encouragement and help he got through the N. B. M. A. It may be true that he got his ideas and inspirations there, but his rare, good business judgment and perseverance made him one of the most successful brick manufacturers in this country.

His passing is a bad blow to his many friends who unite in extending sympathy to his immediate family, who will realize his loss most keenly.

Yours in sadness,
M. E. GREGORY.

R. G. Eisenhart a Milestone in the Progress of the National Association.

My Dear Randall:—

Your wire came too late to enable me to go to Horseheads to attend the funeral of our beloved friend, Mr. Eisenhart. I have been disturbed more or less ever since, for it would have been a great satisfaction for me to have been at the funeral and thus manifest my respect and affection for him.

I can see his smiling countenance in my vision as if he stands before me continuously. I have said to my family that it seems a great pity that we could not have had another

(Continued on page 435.)

AMERICAN FACE BRICK ASSOCIATION TO HOLD NINTH ANNUAL MEETING, FRENCH LICK SPRINGS HOTEL, FRENCH LICK, IND., DEC. 1, 2 AND 3, 1920.

THE FORTHCOMING ANNUAL MEETING of the American Face Brick Association at French Lick, Ind., will follow precedent in being divided up into three formal sessions, with meetings of the various divisions on the afternoon of the second day, December 2nd.

The first session will be devoted to the transaction of business, which includes the customary roll call, reading of minutes, president's address and reports from the secretary and treasurer, report by the traffic committee, and votes on constitutional changes. This session will be closed by an address by Mr. W. E. Worth, assistant manager, industrial relations, International Harvester Company, who will describe the operation of the employe representation plan in use by his corporation, and will give those present the benefit of his best judgment and advice as to how variations of this plan might or might not be acceptable for use in smaller plants such as the majority of those who will be in attendance, operate.

The second session which will take place on the morning of December 2nd will be devoted to addresses by Mr. Stuyvesant Peabody, president, Peabody Coal Company, Chicago, who will lay before those present the coal situation as he views it; Mr. John Fletcher, vice-president, Fort Dearborn National Bank, Chicago, who will deal with the present financial aspect of the country; and Senator William M. Calder, who is chairman of the U. S. Senate Committee on Reconstruction and Production. Senator Calder has been formally invited to speak to this gathering by the A. F. B. A.'s board of directors, but on account of official duties in connection with the investigations which are being made by the committee on reconstruction, it has not yet been definitely determined whether the Senator can make the special trip. In the event that gentleman is unable to be present, it is hoped Mr. Franklin T. Miller, assistant to the Senate Committee, can be prevailed upon to set forth the results of the committee's work and advise how brick manufacturers and dealers can be of service in promoting beneficent legislation.

The third formal session will take place on the morning of December 3rd at which time the membership will be addressed by Louis Grilk, western representative, George L. Dyer Company, the A. F. B. A.'s advertising agents, and G. C. Mars, director, department of service of the A. F. B. A. These gentlemen will not only explain again the efforts of the Association to increase the demand for face brick but will point out methods for taking advantage of the work which is being done and offer suggestions in regard to service.

From the above it will be noted this whole program has been built around the division meetings which will be held on the afternoon of December 2nd.

Election of officers will conclude the program.

From reservations already received, there appears to be no doubt that this meeting will break all previous records for the number in attendance. The French Lick Springs Hotel has made special American plan rates of $8 and $10 for single room, without and with bath, respectively, and $14 and $16 for double room without and with bath, respectively. All manufacturers and dealers expecting to be in attendance are advised to make reservations early.

FACE BRICK DEALERS' ASSOCIATION ANNUAL CONVENTION TO BE HELD IN CONJUNCTION WITH THAT OF A. F. B. A.

The annual meeting of the Face Brick Dealers' Association will be held at French Lick, Indiana, at the same time as that of the American Face Brick Association, December 1, 2 and 3. Secretary Montgomery has worked hard to prepare an interesting program and from all indications there will be proportionately as many dealers present for their meeting as there will be manufacturers at the other convention. They have made a splendid start along broader lines than they have attempted heretofore, and the convention is accordingly looked forward to with deep interest by members and nonmembers alike.

The opening session will occur Wednesday afternoon, December 1st, at 2:30. The chief paper of this session will be "The Benefits of Associations," by B. Mifflin Hood, of Atlanta, Ga.

The Thursday afternoon session will hold much of interest to the delegates. Dr. G. C. Mars, Director of the Department of Service of the American Face Brick Association, will deliver the principal address. His subject will be "The Dealer's Relation to Brick Advertising." Other topics to be discussed are: "Our Obligations to the Customer," "Our Obligation to the Manufacturer," and "The Manufacturer's Obligation to Us."

The Friday morning session will be devoted to reports of various committees and election of officers. The Board of Directors will have a meeting Friday afternoon.

FRENCH LICK THE MECCA FOR PAVING BRICK MANUFATURERS DECEMBER 7 AND 8.

Paving brick manufacturers, members of the various territorial organizations, such as the Eastern Paving Brick Manufacturers' Association, Illinois Paving Brick Manufacturers' Association, Indiana Paving Brick Manufacturers' Association, Ohio Paving Brick Manufacturers' Association, the Southern Paving Brick Manufacturers' Association, and the Western Paving Brick Manufacturers' Association, and of the National Paving Brick Manufacturers' Association will meet in annual convention at French Lick Springs, Ind., Tuesday and Wednesday, December 7 and 8.

A large attendance is anticipated, due to the fact that many problems now face the paving brick manufacturers which need careful study and co-operation, and the individual plant owners are most interested in placing the paving brick business on as firm a foundation as possible, and to prepare for a united effort in boosting the entire trade.

Maurice Greenough, of Cleveland, Secretary of the National Association, has prepared an excellent program which will prove most timely and valuable to all in attendance. Among the prominent men who will address the convention are General L. C. Boyle, Washington, D. C., general counsel of the National Retail Lumber Dealers' Association, and S. C. Hadden, Chicago, Ill., editor and general manager of the Municipal and County Engineering. The complete program has not as yet been issued, but will no doubt consist of addresses and discussions on many live topics of especial interest to the paving brick manufacturers at this time.

KAOLIN IN INDIANA.

THE DEPARTMENT OF CONSERVATION of Indiana has recently published a report entitled, "Kaolin of Indiana," by Dr. W. N. Logan, State Geologist. The publication contains one hundred twenty-eight pages devoted to the physical and chemical properties, the geological conditions of the occurrence, the origin, uses and geographical distributions of kaolin in Indiana.

The occurrence of large beds of kaolin in southern Indiana has long been known. Its extremely pure and crystalline appearance, together with its interstratification with sedimentary rocks has been the cause for a great deal of speculation concerning its origin and geological occurrence. Some have suggested that a coal bed one time occupied this horizon and was burned out while others see in this unusual deposit the residue of a decomposed limestone. A new theory of origin is proposed in the report. Although this clay has been used intermittently for several years, it was left for Dr. Logan to make a detailed survey of the deposits and work out its origin. Extensive laboratory tests have been made of the chemical and physical properties of the clay. Samples have been tested in a large number of laboratories connected with industrial plants, and state and national investigations. Topographical and geological maps of the areas in which the kaolin is found were made, and all embodied in the report, which is now available for distribution at the State Geologist's office, Indianapolis, Indiana.

OBITUARY.

DEATH OF PIONEER BRICK MAN OF WISCONSIN.

WILLIAM HILKER, SENIOR, one of the pioneer brick manufacturers of Wisconsin, died at his home in Racine, Wis., October 31st. Mr. Hilker was born in Germany, in 1843, and came to America when he was 24 years old. He settled in Racine, and in a few years engaged in the brick business, in which he was interested until his death. A wife and ten children survive.

YOUNG KENTUCKY BRICK MAN DIES AFTER LONG ILLNESS.

ALFRED KLEYMEYER, manager of the West Point Brick and Lumber Co., and treasurer of the Kentucky Clay Products Association, died at Henderson, Ky., Monday, October 25. Alfred Kleymeyer was in his 33rd year, having been born at Henderson, May 8, 1888. He was educated and trained for the brick business and was making a fine showing with the West Point Brick and Lumber Co. when cut down in the prime of life. Mrs. Kleymeyer died in April, and it was thought that grief over this hastened his own end. He was operated on at the Jewish Hospital in Louisville last July, and later taken to Henderson for rest and recuperation, but his health failed to improve and he passed away at the home of his father, leaving behind him a little daughter as well as his parents, one brother and four sisters. He was laid to rest in Cave Hill Cemetery, Louisville.

OLD TIME COLUMBUS BRICK MAN PASSES AWAY.

LINCOLN G. KILBOURNE, president of the Columbus Brick & Terra Cotta Company, Columbus, Ohio, died suddenly at his home in that city of heart failure early in November. Mr. Kilbourne was seventy years old, and had been engaged in the brick business for many years. He had been more or less identified with the various associations in the clayworking field and was one of the founders and early presidents of the American Face Brick Association. His wife, two daughters and one son survive.

SUDDEN DEATH OF NEW JERSEY BRICK MAN.

WE ARE ADVISED by Mr. Hubert Somers, treasurer of the Somers Brick Company, Atlantic City, N. J., of the sudden demise of Elton Braddock, who for fifteen years has been superintendent of the Somers Brick Company's plant at Bakersville, N. J. Owing to a weakened heart, Mr. Braddock had failed in health during the last few months. He had planned a cruise to the West Indies in the hopes of recuperating. On the morning before he was to have sailed he suffered an attack of heart failure in his room at the McAlpin Hotel, New York City, and died in a few minutes. Mr. Somers writes: "Mr. Braddock had served this company faithfully since its organization in 1900, and will be greatly missed."

Mr. Braddock had been a member of the National Brick Manufacturers' Association for many years, never failing to keep up his membership, even though he was not able to attend as regularly as he desired.

ILLINOIS BRICK MAN ANSWERS LAST ROLL CALL.

EDWARD RODGERS, one of the pioneers of Alton, Ill., died at his home in that city October 26th. While he was eighty-one years old, he had been in good health until the last of August, when he was taken ill while on his way to Alaska with his wife. He was stricken at Vancouver, where he was waiting for their passage on a steamer, and he was taken back to Alton, his birth place. Mr. Rodgers was interested in all of the civic and industrial life of his town. Twenty-eight years ago he founded the Alton Brick Co., of which he was president at the time of his death, although the management of same had been in the hands of his son, Eben Rodgers, for many years. He was also president of the El Paso (Texas) Brick Co., El Paso, Texas, which is operated under the management of his younger son, W. Hewitt Rodgers. The members of the N. B. M. A. who attended the New Orleans convention, where Eben Rodgers was elected president, will remember his father and mother, who charmed everyone with their sweet, old-fashioned courtesies and consideration. Mr. Rodgers was a great traveler, not only in his own country, but with his wife had traveled extensively abroad.

Mr. Rodgers came of a long-lived family and has two brothers living, one at the age of ninety-four and the other seventy-eight. In addition to the two sons mentioned above, he leaves a wife and one daughter.

OWN YOUR OWN HOME EXPOSITION TO BE HELD IN CHICAGO.

BRICK AND CLAY industries will play an important part in the first Own Your Home Exposition to be held at the Coliseum in Chicago March 26th to April 2nd. This exposition, which will represent every building and house furnishing industry, will be complete in every detail and will culminate a nation-wide campaign in the interest of homes and home building. One of the aims of the exposition will be to show the people how they may build their own home, in spite of the present costs and their present financial condition, as methods of solving these problems have been worked out by experts and will be offered to the public. Architects of the country are competing in a prize contest for plans for small houses and the results of this contest will also be available to prospective builders at the exposition. An elaborate floor plan and installation has been completed in detail by the Architectural Committee, and they demonstrate that the undertaking will be eminently practical and will do much toward stimulating interest in home building.

At the conclusion of the Chicago show the complete equipment and installation will be removed by a special train to New York, where the third Own Your Home Exposition will be held. The committee representing the brick and clay interest, which will have a very important part in the planning and carrying out of the campaign, comprises the following: W. P. Varney, chairman, manager Hydraulic Press Brick Co.; William Gates, president American Terra Cotta and Ceramic Co.; R. D. T. Hollowell, secretary American Face Brick Association; Herman L. Matz, vice-president S. S. Kimbell Brick Co.; Clark L. Rorick, president the Construction Publishing Company; Wm. Schlake, president Illinois Brick Co.; E. R. Sturtevant, secretary the Hollow Building Tile Association, and George W. Tefft, secretary Clay Products Association.

THE CLAY-WORKER

Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

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THIRTY-SEVENTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	$ 2.00
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ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
226 East Ohio St. T. A. RANDALL & CO. [Inc.], Indianapolis.

Vol. 74 November, 1920 No. 5

CURRENT COMMENT.

We can all think of a lot of things to be thankful for.

* * *

We are fussing too much about our rights and not thinking enough about our duty.

* * *

Experience is not the whole thing in business but it is an important element to ultimate success.

* * *

Sarcastic Sam says that one trouble with the country right now is too many diamonds and not enough alarm clocks.

* * *

System is essential in business, and it is productive until you get too much of it, then it becomes entangling red tape.

* * *

Another thing we have to be thankful for is that the freight congestion is over and there is transportation enough to go around.

* * *

Maybe some of us can make good on the excuse that money is so tight we are justified in postponing the Christmas shopping till next year, but we won't.

* * *

The bright lights of New York are flashing a welcome call to clayworkers everywhere for the annual gathering of the clans, the first week in February.

* * *

From the literature being prepared to boost National Thrift week, January 17 to 23, we feel sure that our old friend, Ponzi, at Boston, is coming in for a lot of additional free publicity.

* * *

How to handle clay for less money, and brick with less work, is a question that a lot of folks will be seeking the answer to this winter. Get the answer at the National Convention, New York City, January 31 to February 5, 1921.

* * *

The modern way of making money talk is to buy a talking machine with it.

* * *

Let's quit "viewing with alarm," and do more plan pushing with confidence.

* * *

One good faculty in business is that of being able to choose the right men to help.

* * *

It is easy enough to start a price decline, the problem is to stop it at the right place and be sure it's stopped.

* * *

There are no ready-paved highways to ambition's goal any more than there is a royal road to learning or a quick way to get rich.

* * *

During the dull season is a good time to do some thinking about real salesmanship as well as planning greater producing efficiency.

* * *

The per capita money circulation of the United States is now given as $59.50. Why not make it $60.00 even and cut out the bargain effect?

* * *

We are told that the government will require four billion dollars revenue a year for the next three years. The great problem is how to extract this much from the people with the minimum of pain and howling.

* * *

It is refreshing to read in the midst of all this talk of short money that the resources of all banking institutions in the United States show a total of $53,000,000,000, which is said to be in excess of the combined bank assets of all leading nations of the world.

* * *

The suggestion has been made that from their increased earnings railway employes could and should buy up the railroads of the country. Yes and the coal miners might buy up the mines, but they all seem to prefer autos, diamonds and talking machines.

WINTER WORK.

Opinions differ widely among the clayworkers as to the advisability of operating through the winter months and piilng up stocks for the spring needs. It is probable that a safe and sane policy would be to avoid extremes. A general shut down would mean shortage in stock and feverish efforts to supply the needs next spring. On the other hand, too much winter production may make a burdensome condition and lead to reckless business. Each manufacturer should be governed by the conditions in the territory surrounding him, prospects for business, and his own facilities for winter operations. A fair amount of stock ready for the spring trade is a good thing to have if it looks like the trade will need it.

PLANT ALTERATIONS.

The winter season is the logical time for planning and carrying out many changes and alterations in clayworking plants. Those who work through the winter may take two hitches at it, one of preparing storage room and inclosing the plant for winter operations, and the other in making enlargements and alterations for spring and summer run. This winter there should be an unusual amount of this kind of work, partly because it was not practical to get equipment readily last winter and some of this work had to be postponed, and partly because the production needs for next year will likely be greater. The first bit of advise it is desired to offer in this connection is, get at your plans for plant alterations early, get in your orders for new machinery and additional equipment, and get busy at the work so that even with the interruptions of bad weather it may be completed in plenty of time to render full service next spring.

TROT OUT YOUR SALESMANSHIP.

If you've got anything in the form of real salesmanship or selling ideas in clay products it is time to trot them out and put them in training, for the coming year looks like one in which real salesmanship is going to count big. If you have got some salesmanship ideas that you think are good, and somebody to use them, it is time to get busy and round them up. What is need, however, is real sealesmanship, not a lot of high-geared bunk which we have had plenty of in the past. If the signs read right the next year will see the scrapping of a lot of salesmanship theories and pratices, or it will see a lot of men who think they are salesmen falling down on the job. The occasion now is one which calls for real common sense salesmanship, and the extent to which the clayworking industry may expand in the building material line depends considerably upon the quantity and quality of salesmanship developed and put into action between now and the busy building season next year.

PRICE RE-ADJUSTMENT.

There are some things about the present tendency in prices and the lowering of cost all around which are enough to remind one of the old story of cutting a dog's tail off an inch at a time on the theory that it won't hurt so much as taking it all off with one cut. The whole country will feel better if it could get at this price readjustment and get done with it at one stroke. Cutting down a little this week, a little more next week and so on, instead of encouraging buying does exactly the other thing. People are continually looking and waiting for still lower prices. It would be a great thing for the clayworking industry if prices could be readjusted and put on a permanent basis without any bickering and dickering and gradually coming down from the highest notches possibly to a point below the profit margin, and then having to build up again. It is a situation calling for frank and honest conferences between the clayworkers who meet each other in competition everywhere in the hope of finding a common ground of understanding of just what may be the logical minimum of prices on the different kinds and grades of brick and hollow building tile and other products entering the trade, so that everyone may know where they are at, what to expect and what to do. The sooner we get at this thing, get through with it and get over it the better it will be for the industry as well as for the encouragement of buyers.

STANDARD BUILDINGS FOR INDUSTRY.

While we are busy standardizing building units, window and door openings and other things for residential and similar structural purposes it may be well for the clayworking industry itself to consider in connection with its own structural needs the fact that we are rapidly standardizing buildings for industrial purposes. Some of the structural steel people, for example, are putting out a number of standardized patterns of industrial buildings made in a variety of unit sizes which tend to reduce the cost of construction and to simplify and speed up the work. Standardization of plant structures and of sheds and warehouses is a splendid idea that is finding wide favor. It is an idea that the clayworking industry may profit by in erecting new buildings and it is one which may be extended to some of the special requirements of the industry. In kiln construction and other special work the standardizing of sizes and units will not only make for easy and less costly construction but it simplifies the problem of repairs and reconstruction.

THE PAINT ITEM.

The lumber folks themselves have given us some interesting figures on the item of paint in building cost which makes good argument for the brick men. The National Lumber Manufacturers Association in order to prove that the lumber in a home only represents about one-third of the cost, gives the itemized figures of the cost of building a home in Iowa the total cost of which was, including contractor's profits, $5,454.93. The first item in the tabulated figures of cost is that of paint, representing a total of $215. When we consider that this is one item in the first cost in such a home and that it must be repeated every few years it furnished pretty good argument in favor of building with brick.

THE CROP REVIEW.

It is particularly appropriate that we should review crop conditions at this time because it was the harvest which moved the Pilgrim Fathers to set apart that day in November for Thanksgiving. Reports at hand indicate that the larder of this country is abundantly stocked for the winter, though turkey may be scarce and roosting a bit high. The 1920 crops set a new record with the exception of wheat, rye and buckwheat. These are somewhat smaller than a year ago but at that plentiful enough to bring some easing in the price of bread. Corn, oats, potatoes, rice, cotton, tobacco, apples, and sugar beets show outstanding gains in production and all around everywhere we see plenty of everything to supply the dometic needs and furnish a fair surplus for export. The abundance of the crops probably contributed more than anything else to lessen the burden of high living cost and hasten the return to more normal conditions in the industrial world.

MYSTERIES OF MONEY.

It is only a little while back that there was so much money running around loose in the country that people were wasteful and extravagant in regard to it and the banks had so much of it to loan that almost anyone with any reasonable kind of security could get money at the banks. Then suddenly there was a tightening down and now we find that money is scarce and that banks make searching inquiry before venturing a loan. All of which raises the natural question, what has become of the plentiful supply of money of awhile back? Of course there are many answers, but just the same to the average mind money is a sort of mysterious thing which has a habit of being plentiful some of the time, and then being scarce, and yet being with us all the time.

SCIENCE IN INDUSTRY.

We have come to the period of scientific analysis of our industrial problems and as might be expected the conditions are developing a crop of scientists and would-be scientists who are flooding the country with theories and propositions to put your business in better shape if you will but turn the matter over to them and pay them for their services. Science in business is not a mysterious thing that you have to go out and buy from one else, it is a thing that you can develop yourself with the aid and co-operation of those engaged in the industry with you, and probably by calling in expert counsel for some of the more complicated problems. We need science in industry, and perhaps more of it in the clayworking industry than in many others. Let us be sure, however, that we get the real thing, and let us be a bit careful about paying out too much money for something that is not the real thing. There are recognized authorities on clayworking problems and it were better to consult these than to accept the vague and complicated propositions of strangers under the guise of bringing you science.

MR. GALLAGHER TO WINTER IN FLORIDA.

B. J. Gallagher, formerly of Canton, Ohio, was a recent caller at The Clay-Worker office. Stopped over en route to Florida. He is making the trip through by automobile, accompanied by Mrs. Gallagher, and expects to put in the winter loafing and fishing at Petersburg and other Florida resorts.

THANK YOU.

"Thank You," is the suggestive title of an artistic booklet which comes to hand with the compliments of the Sheldon Brick and Building Supply Co., Champaign-Urbana, Ill. It is by Henry Hansen, and tells us more good things about "thank you," when and how to use it effectively, than we ever dreamed existed. We expect to keep it sticking around for ready reference. "Thank You."

GAS EXPERT JOINS MANUFACTURERS' EQUIPMENT COMPANY'S FORCE.

Ernest W. Knapp, C. E., of Canton, Ohio, has recently taken a position with the Manufacturers' Equipment Co., Dayton, as salesman and producer gas expert. Mr. Knapp is a graduate of the New York School for Clayworkers, and is recognized as one of the best authorities on producer gas for burning clay wares in the country.

LARGE SHALE BRICK PLANT FOR PENNSYLVANIA.

The Clay Products Company of America, of which General Bowman, of Philadelphia, is president, after considerable investigation, have decided to go ahead with the construction of a large shale brick plant on their properties at New Hope, Pa. The Ceramic Engineering Co. have been selected to engineer the undertaking and Mr. W. D. Richardson is giving the plans his personal attention and says that the plant will be the last word in economical brick manufacture.

GOOD THINGS IN AMERICAN CLAY MAGAZINE.

The September issue of the American Clay Magazine, published by the Hadfield-Penfield Steel Company, Bucyrus, Ohio, is most interesting, containing some fine suggestions to the manufacturers of various clay products. The cover illustration shows a corn field where insufficient tile made a poor crop. This illustrates the leading article, "More Tile, More Wheat," which is particularly interesting to the drain tile manufacturers. The greater part of the booklet is given over to good roads and paving brick interests, although building brick, current notes, and news items find their proper places. Clay product manufacturers in general will find this a handy reference leaflet for it contains illustrations and details of many of the Hadfield-Penfield Steel Company's large line of clayworking machinery and apparatus.

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.,

required by the act of Congress of August 24, 1912, of The Clay-Worker, published monthly at Indianapolis, Ind., for October 1, 1920.

State of Indiana, County of Marion, ss:

Before me, a notary public in and for the state and county aforesaid, personally appeared Theo. A. Randall, who, having been duly sworn according to law, deposes and says that he is the editor and business manager of The Clay-Worker, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

That the names and addresses of the publisher, editor, managing editor and business managers are:

Publisher, T. A. Randall & Co., Inc., Indianapolis, Ind.

Editor, Theo. A. Randall, Indianapolis, Ind.

Managing Editor, none.

Business manager, Theo. A. Randall, Indianapolis, Ind.

Owners are T. A. Randall & Co., Inc., Indianapolis, Ind.; Theo. A. Randall, Theo. B. Randall and James E. Randall, Indianapolis, Ind.

Known bondholders, mortgagees, and other security holders holding 1 per cent. or more of total amount of bonds, mortgages, or other securities: None.

That the two paragraphs next above, giving the names of the owners, stockholders, security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Signed) Theo. A. Randall, Publisher.

Sworn to and subscribed before me this 30th day of Sept., 1920.

(Signed) CHRISTA A. LEWIS, Notary Public.

[Seal] My commission expires June 30, 1921.

THE PASSING OF E. G. EISENHART.

(Continued from page 425.)

meeting before the Almighty called him home, so we could have once more had the pleasure of looking into his pleasant face and feeling his warm hand grasp. How his pleasant little wife must be afflicted. No one can imagine. My heartfelt sympathy is extended to her and all the family.

Mr. Eisenhart was surely a milestone in the progress of the N. B. M. A., for which he stood like the rock of Gibraltar in season and out. I am sure we will all miss him very much at the next meeting of the N. B. M. A.

Bridgeville, Pa., Nov. 1, 1920. C. P. MAYER.

His Place Cannot Be Filled.

My Dear Randall:—

I am deeply grieved to hear of the death of our old friend, R. G. Eisenhart. I have known him intimately since February, 1895, and entertained for him a warm affection, and he was, in my opinion, good for many years to come of useful and valuable service to this world. The blow falls heavily I assure you. Men like myself, who are living on borrowed time, feel deeply the loss of old, tried friends, whom they cannot replace.

My heart goes out in sympathy to his dear ones who have been left behind to mourn his departure.

C. A. BLOOMFIELD.

A Man of Sterling Worth.

Dear Mr. Secretary:—

Your letter on the death of Mr. Eisenhart is indeed sad news. My brother, Charles, and I, feel his loss most keenly.

It was a genuine pleasure to meet him and his family at the conventions. Each succeeding year's contact with him served but to accentuate the friendship engendered by his genial, kindly nature, and to impress upon us more indelibly his sterling worth as a man.

The Association has lost one of its most valuable members; his enthusiastic interest and support, and open, straightforward counsel, will be sadly missed.

Detroit, Nov. 4, 1920. GEO. H. CLIPPERT.

Technical Training Made Possible by Mr. Eisenhart's Encouragement.

Dear Mr. Randall:—

We have some sad news for you at this time, although doubtless you have been informed that R. G. Eisenhart has ceased to serve his fellow men. He was a very good friend and adviser. It was his training, advice and encouragement that made possible my technical training in ceramics after thorough, practical education received in all departments of the Elmira and Horseheads plants.

To me it is a great loss of a real friend. I am sure he leaves many such. Sincerely yours,

Dayton, Ohio. ERNEST W. KNAPP.

Integrity in Every Walk of Life.

My Dear Randall:—

The announcement of Mr. Eisenhart's death is to me sad, indeed. While I never had an opportunity to cultivate an intimate friendly relationship, still there was that sort of extreme confidence, I have always felt, in his good sense and in his integrity in every relationship in life, that commanded respect and admiration. I have had a feeling that Mr. Eisenhart felt very much toward me as I felt toward him. I feel keenly, therefore, the loss of such a man. He was quick to analyze a business situation. He was quick to discern a motive for every act of his associates. He was willing to and did measure men not by their minor faults, but by their worth as a whole. We have all too few men like Eisenhart. He was loyal, he was just.

I know he was an unshaken friend of yours, and I fully appreciate your own sense of his loss.

Yours very truly,
WILL P. BLAIR.

A Heritage of Grateful Memories.

My Dear Randall:—

Your letter with the news of Eisenhart's death is at hand. The dark curtain has fallen, and he has gone out beyond it and into the Great and Impenetrable Mystery. We shall miss him sadly, but will all treasure our store of memories, now grown sacred. Yours,

Chicago, Nov. 1, 1920. WM. D. GATES.

Will Ever Remember Him With Abiding Affection.

My Dear Randall:—

I certainly am shocked and grieved, beyond expression, to learn of the death of our good friend, Eisenhart. We of the N. B. M. A. who have come to know him well will ever remember him with abiding affection. I cannot find words properly to express my appreciation of his many good qualities of head and heart. He was one of the strongest supporters of the National Brick Manufacturers' Association, and his death leaves a vacancy which will never be filled. We will miss him from our councils and I am sure I voice the sentiments of our entire membership when I say we deeply sympathize with his family. Most sincerely,

Zanesville, Ohio. R. C. BURTON.

An Appreciation.

Dear Mr. Randall:—

In behalf of the family of my late and beloved grandfather I am writing to express our thanks and sincere appreciation of the thoughtfulness of the National Brick Manufacturers' Association in sending the beautiful floral piece of chrysanthemums at the sad hour. It was wonderfully significant of his love and devotion for the N. B. M. A. Grandmother received such a consoling letter from you and we all appreciate it very, very much. Words are usually so futile in a time like this, but coming from one whose friendship was prized highly by our departed one, it was very consoling and greatly appreciated.

Again thanking you for your kind and thoughtful condolence and extending through you our sincere thanks to all the members of the National Brick Manufacturers' Association, I beg to remain, Very sincerely yours,

J. RICHARD EISENHART.

Horseheads, N. Y., November 10.

BIG BRICK CONTRACTS AWARDED IN WASHINGTON, D. C.

ONE OF THE largest building operations calling for the use of brick in Washington, D. C., is the new Gallinger Hospital, which will cost, when completed, $2,000,000, and the contracts for which have just been awarded.

From the Hudson Cement & Supply Company, of Baltimore, Md., the District of Columbia government will buy 1,900,000 face brick, at $21 a thousand, 500,000 red brick, at $29 a thousand, and 15,000 radius brick, at $35 a thousand.

West Brothers Brick Company, of Washington, have the contract to furnish 100,000 arch brick, at $22 per thousand.

The contract for the building, outside of supplying the bricks, was awarded to a Washington builder. The District of Columbia authorities found that they could buy and furnish the brick to the contractor at a substantial saving, and this plan is being followed. A. T. M.

THERE IS A

"MOTIVE"

BACK OF THIS LOCOMOTIVE

The "MOTIVE" back of this locomotive was the desire of The Hadfield-Penfield Steel Co. to maintain the half century prestige of the American Clay Machinery Co. in the building of dependable equipment to Clay Plants. Here is the finished "locomotive." It is dedicated to the profit of successful Clay Plants and we recommend it to the exacting attention of the Clay Trade and other industries where convenient, cheap and dependable motive power is desired.

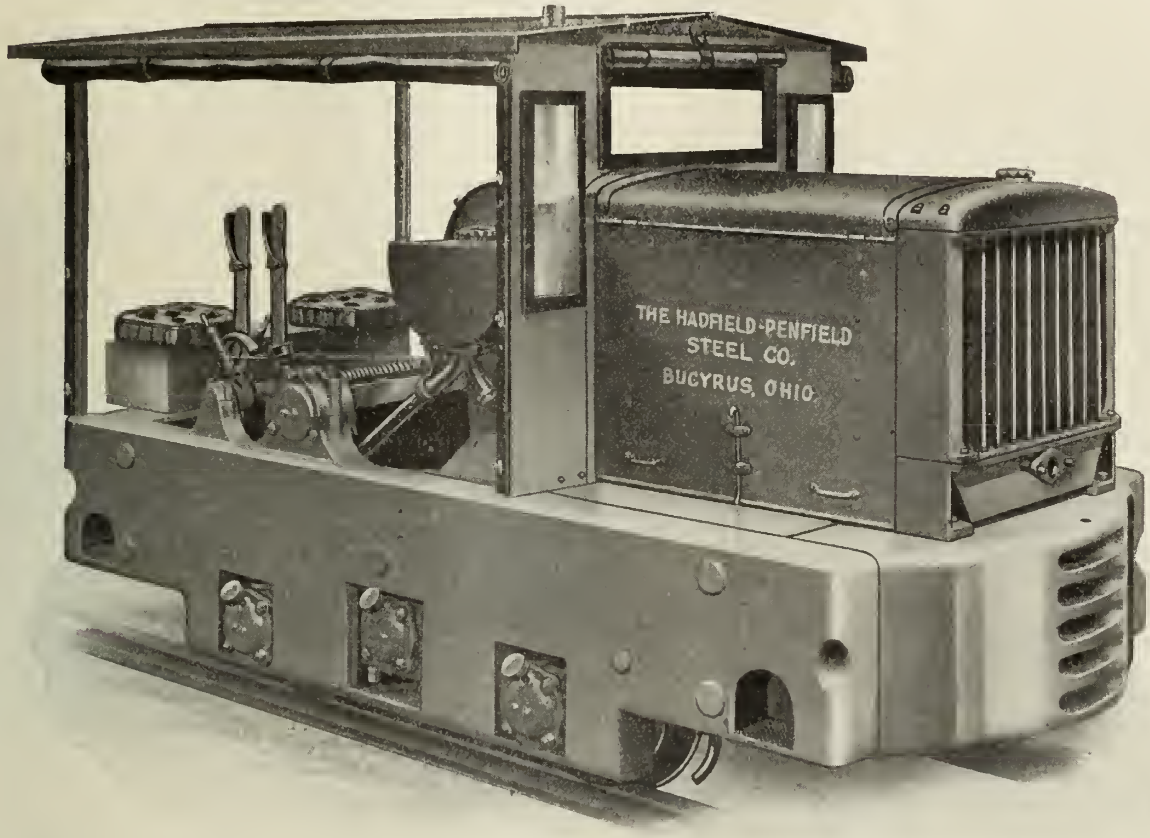
Let the American "Gas-o-Motive" do your hauling.

We build everything required for properly equipping a Clay Plant of any description and will be pleased to send printed matter on request.

BUILT
RIGHT
RUN
RIGHT

THE MOTIVE

Here are the high spots in the construction of the American "Gas-o-Motive." Look them over. Come to us for additional information and demonstration. If you are at all interested it will be a pleasure to send you complete description.



"HIGH SPOTS" OF SUPERIORITY

1 HERCULES FIVE MAIN BEARING, full force oil feed, heavy duty type motor, with detachable head and including Monarch governor.

2 Efficient cooling system including tubular type radiator, extra heavy, enclosed fan and water pump for water circulation.

3 Telescopic design coupling enclosed in transmission housing (original on the American.)

4 Self-aligning axle bearings providing against cramping on uneven rail.

5 Use of hardened steel sleeves on axle and jackshaft bearings.

6 All drive chain enclosed in dust proof housing with removable covers, chain constantly taking a bath of oil and thoroughly lubricated.

7 Positive sanders to all wheels.

8 Direct and proper vision for operator at all times from natural operating position.

9 Accessibility to all parts.

10 Simplicity in construction.

11 Lowest possible maintenance and upkeep cost.

12 Sturdiness of construction.

Printed matter and specifications sent on request.

The Hadfield-Penfield Steel Co. Formerly The American Clay Machinery Co.

Bucyrus, Ohio.

George G. Stein
Mgr. Gasoline Locomotive Sales Dept.
404 Hippodrome Bldg., Cleveland, Ohio.

TRADE NOTES AND CLIPPINGS.

The Celina Brick Company, of Celina, Ohio, has had a very successful season, and have orders ahead for all of their output for the rest of the year.

The Nampa Clay & Cement Products Co. has been incorporated at Nampa, Idaho, with $75,000 capital stock. The stockholders are S. C. Skinner, J. W. Griffin and Ada Griffin.

We regret to announce the death of Mr. A. W. Lawshe, president of the Southern Refractories Company. Before affiliating himself with this concern Mr. Lawshe was long identified with the potteries of Trenton, N. J., and his sudden death will be a surprise to all of his friends.

The plant of the Richlands Shale Products Co., Littleton, S. C., is fast nearing completion. Part of the kilns are now under fire and the product so far turned out is fully up to all expectations. P. H. Haltiwanger, of Columbia, S. C., is president of the concern. The company will make both brick and hollow building tile.

Another large refractory company will locate in the vicinity of Buffalo, and that is the Buffalo Refractory Corp., which has recently been granted incorporation articles. It is the intention of this company to manufacture only the highest grade of refractories. The company is headed by prominent men of the city of Buffalo, N. Y.

In conjunction with the School of Industrial Arts, Trenton, N. J., Professor G. H. Brown, director of the Departments of Ceramics, Rutgers College, New Brunswick, N. J., has given a series of lectures before superintendents and foremen of several of the different potteries of this city. Mr. Brown is also directing a course of instruction in ceramics, with evening classes at this school. The interest in this course runs high and there is always a large number of would-be ceramists in attendance.

One of the most active brick concerns in New Jersey is the Independent Brick Company, with plants at Kindora, N. J. ,and Bordentown, N. J. This company is furnishing the brick for Trenton's new two million dollar hotel, which will be one of the finest in this section. They are also furnishing the brick for the new $500,000 Hildebrecht restaurant. It is also understood that this company is furnishing the brick for the new addition to the Lenox, Inc. Another brick company doing exceptionally well is the Sneyd Enameled Brick Co., which is working to their full capacity.

A. B. Fosseen, president of the Washington Brick, Lime and Sewer Pipe Co., of Spokane, Wash., delivered an address recently before the local Chamber of Commerce on the "Development and Future Possibilities of the Clay Products Industries of Washington," which was listened to with interest. Mr. Fosseen's company operates two plants, one at Spokane and one at Clayton, Wash., and both plants have been operating to capacity all year, turning out vitrified and face brick, fire brick and terra cotta, which are shipped to many cities throughout the west, and the company has recently bid on a large building to be constructed in Japan.

The popularity of tunnel kilns seems to be growing steadily in Trenton. The Mutual Potteries Co. of Trenton are installing a Dressler tunnel type kiln which will be about 350 feet long. This company is a local branch of the Trenton Potteries and the new plant will adjoin the Ideal Pottery, which is a branch of the Trenton Potteries. This will make seven plants in this city that are now being operated by the Trenton Potteries Co., i. e., Empire Pottery, Equitable Pottery, Enterprise Pottery, Ideal Pottery, Mutual Potteries, Delaware Pottery and the Crescent Pottery. The Lenox, Inc., manufacturers of famous bleekware and the Lenox china, are also installing a Dressler Tunnel kiln. The Lenox, Inc., expect to start operations within a short time.

A new company to incorporate during the last few weeks was the Hampton Brick & Tile Company, of Hampton, Va., which was organized for $500,000. It is the aim of the company to sell the entire output of stock in Hampton and vicinity, thus giving the city of Hampton one of the largest brick and tile plants in that vicinity.

The Montreal Fire Brick Works Company and the Canada Supply Company, Ltd., has been consolidated and will hereafter operate under the name of The Canadian Fire Brick Company, Ltd., with head offices at 418 South James street, Montreal, Canada. Many improvements have been made in the plants, including the building of new kilns.

The potters of Trenton and vicinity regret to announce the death of Dr. T. H. MacKenzie, one of the best known men of this city. Mr. MacKenzie has long been identified with the clay game in this city and was a director of the Star Porcelain Company. Besides being well known in the clay game, he was one of the best physicians the city boasted of.

Another large spark plug company has located in Canada. This is the A. C. Spark Plug Company, Ltd., of Brantford, Ontario. They have recently been granted articles of incorporation. The incorporation has been set at $10,000. It is understood that this company is in an ideal location to carry on this manufacture, being in near reach of large clay fields, and also flint and spar mines.

LANCASTER IRON WORKS PURCHASES ARNOLD CREAGER COMPANY.

ONE OF THE big events in the clayworking equipment field occurred during the present month when the Lancaster Iron Works, Lancaster, Pa., bought out the entire interests of the well established firm of Arnold Creager & Co. of New London, O.

The Arnold Creager Co. was originated in 1877 by Mr. D. J. C. Arnold, who prior to that time was a partner of the late Henry Martin, father of the present manager of the Lancaster Iron Works, Jas. P. Martin.

The Lancaster Iron Works has taken over the business of the Arnold Creager Co. in its entirety. Mr. Jas. P. Martin will be vice-president and general manager of both the New London shops and clayworking machinery department at Lancaster. The general offices will be at Lancaster. The New London, O., shops will serve as a branch of the Lancaster Co.

The purchase was due to the realization on the part of the Lancaster Co. of the many points of merit and the great demand for the automatic soft mud brick machine made by the Arnold Creager Co. and their desire to add this company's line to theirs.

Mr. Martin in a recent communication stated that after a careful study of the situation, his company was convinced that the Arnold Creager S. S. S. Special Automatic Soft Mud Machine was as simple, strong and satisfactory an automatic brick machine as could be built and this opinion was substantiated by the judgment of many leading manufacturers who have installed this wonderful machine.

The old Arnold Creager Co. could not supply the demand due to lack of facilities in their New London factory so that this machine will be made at both New London, O., and Lancaster, Pa.

See the double page announcement of the Lancaster Iron Works on pages 448 and 449 of this issue.

PORCELAIN INSULATOR CORPORATION.

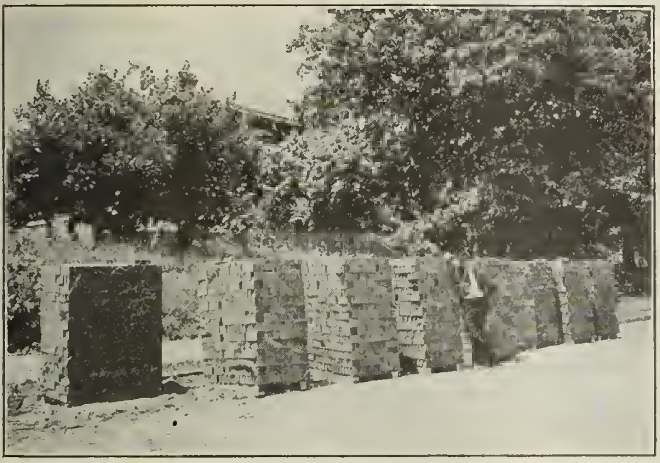
The Porcelain Insulator Corporation, of Lima, New York, has been incorporated for $100,000 to manufacture insulators. It is understood that the building and equipment will cost in the neighborhood of $75,000. It is to be of brick and hollow tile and brick construction.

DEMOUNTABLE TRUCK BODY HIGHLY RECOMMENDED.

WE HAVE HEARD many very favorable comments on the Fontaine Demountable Truck Body, made and sold by the American Truck Body Co., Martinsville, Va.

Among the many claims for this equipment is the important one that it saves $20 to $45 per day over the old way of delivering brick. The truth of the assertion is borne out by such reputable firms as the Belden Brick Company, Canton, Ohio, the Somers Brick Co., Atlantic City, N. J., Statesville Brick Co., Statesville, N. C., Shreveport Brick & Tile Co., Shreveport, La., and the Mamer Brick Co., Benton Harbor, Mich. All of these firms recommend the equipment in strong terms. Especially is this true of the letter written by the Belden Brick Company, which is given in the advertisement of the American Truck Body Co., on pages 464 and 465.

The Fontaine Demountable Body is now in use in various sections of the United States and in a number of cases has been in constant use from six to twelve months with practically no wear, proving it is in a perfect state of development. A great amount of time and expense can be saved by using motor trucks with the Fontaine demountable body. One concern using two trucks declares their Fontaine bodies deliver more brick than ten mule teams, each body delivering 11,000 brick per day on a five mile haul, whereas five mule teams could only deliver 10,000 brick on the same haul. Another advantage is the fact that it does away with all breakage. With this system of delivery, none of the brick are chipped or broken and the product is delivered on the job in a neat compact unit convenient to all concerned.



No Cracking or Chipping in Delivering Brick by Truck Body.

The demountable truck body saves much burdensome work around the brick plants, and the way to make it save more is for more manufacturers to use it. Every brick manufacturer who delivers any quantity of brick should investigate this money, time and labor saving system.

BRITISH POTTERY NOTES.

A REPORT FROM Consul A. F. Doty, Stoke-on-Trent, England, gives extracts from the annual report of Mr. S. Clowes, General Secretary of the National Pottery Workers' Society, at a recent conference there.

This was the fourteenth annual report since the amalgamation in 1906 and it shows an increase in membership from 35,000 to 45,000. This includes the amalgation of the Pottery Workers', the Ovenmen's and Packers' Societies.

The features of the report were, the advance in wages obtained during the year, and the adoption of a clause which makes it obligatory for an employer to supply piece workers, by ticket, by poster in work shop, or by books kept in such departments, the prices to be paid for each article per dozen or per score at the time the work is being done. The object of this is to prevent one person working at a different price than another. Incidentally, too, it raises the interesting question of whether or not all piece workers are entitled to the same rates of pay for the same kind of work.

One gathers the impression from this report that English potteries evidently operate under the closed shop plan or agreement and also that there is some inclination and effort to develop an international federation of pottery workers.

AN INTERESTING BOOKLET ON PRODUCER GAS.

A very timely treatise on the subject of producer gas for various lines of the ceramic industry has been recently mailed to the trade by the Manufacturers Equipment Co., Dayton, O.

Because of the serious fuel and labor conditions existing today which are controlled in a material way through installation and use of this, the Underwood Patented Producer Gas Burning and Heating System, is the foreword given by this company in a plea for serious consideration of the material contained in this very valuable catalogue. The subject matter together with excellent illustrations is well worth every clayworker's very careful study. If you have not received a copy of this booklet, better write for a free copy. See their advertisement on page 443 of this issue.

WATERWAY TRANSPORTATION.

Every time we have congestion in rail traffic there is a reawakened interest in the subject of waterway transportation. Also right now the higher freight rates add interest to the subject of waterway transportation as a possible means of economizing transportation cost.

Practically every era of keen interest in waterway transportation is followed by effort at development, then disappointment and reaction. Somehow inland waterway transportation seldom fulfills its promises except on lakes and canals tributary thereto. One reason is its slowness, and the other is the uncertainty and difficulties of control of rivers.

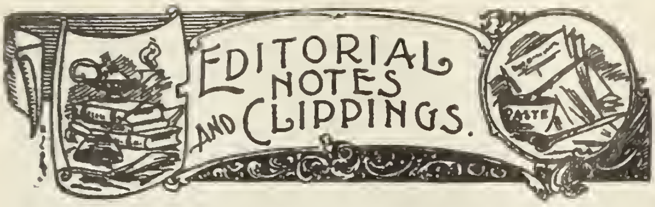
Still we are making some progress from time to time, and some improvement in waterway transportation that helps out, and probably will continue to do so. The motor truck is entering as quite a factor though, and the development of good roads easily outweighs in interest the subject of waterway improvement for transportation purposes.

WOMEN IN THE BUSINESS.

The clayworkers have long counted the women in at the annual gathering of the clans as full partners, but at home in the practical conduct of the details of affairs the brick business is largely a man's business. That is the way we have looked upon it in the past. In the future women are threatening to play a more important part in the management and conduct of the business itself.

What all this is leading up to is the following paragraph in the "Building Industry" of Cleveland.

"Probably the most capable woman in the building supply business when it comes to a knowledge of the manufacture and distribution of brick, is Miss Anne Kaechley, office manager of the R. L. Queisser Co., Cleveland, Ohio. Miss Kaechley started in the brick business with the Hydraulic-Press Brick Co., of Zanesville, Ohio, and came to Cleveland with the Queisser Company at the time of its organization. Miss Kaechley is known to every brick manufacturer and distributer in Ohio, and has visited practically every plant in the Ohio district."



EDITORIAL NOTES AND CLIPPINGS

The Sharon Clay Products Company, of Sharon, Pa., has increased its capital stock from $125,000 to $150,000.

The plant of the Dochert Brick, Tile & Terra Cotta Company, Arnprior, Ontario, Canada, sustained a $15,000 loss by fire recently.

The Reliance Brick Co., of Kansas City, Mo., has obtained a permit to transact business in Texas, with headquarters at Dallas. W. H. Gifford is manager.

Cheboygan, Mich., is to have a new brick and tile factory. Fourteen acres of land have been purchased and the erection of the plant will be started at once.

The clays in the vicinity of Vernon, Texas, are being tested with a view of establishing a brick plant if the tests prove favorable. The Vernon Chamber of Commerce is interested in the movement.

The Harbison-Walker Refractories Company, Pittsburgh, Pa., has declared the regular quarterly dividend of 1½ per cent on the common stock, payable December 1 to stockholders of record November 20.

The Baltimore Brick Co. will make extensive improvements in its plant at Baltimore, Md., including the erection of a one story shed 132 feet by 165 feet of brick construction, and a large Standard Dry Kiln Co. steam dryer.

The Detroit Fire Brick Co., Detroit, Mich., has been organized to deal in fire brick and builders' supplies, with an authorized capital stock of $10,000, $5,000 of which has been subscribed and $1,000 paid in in cash.

The National Shale Brick Co., Martinsburg, W. Va., of which F. Vernon Aler is president, recently organized, has had plans prepared for its new works to cost about $250,000 including machinery. Several one-story buildings will be erected.

C. Butler and J. E. Fry, owners of the Astoria (Ill.) Brick Works, have remodeled the plant and added new machinery and in a few days will start to manufacturing tile in addition to making brick. They have a well equipped plant, housed in such a manner that work can be carried on almost steady throughout the year.

Wm. Fuoss, president of the Tyrone (Pa.) Brick & Tile Company, advises that the plant has not been operated for some time and will remain idle until spring. In the meantime, the company would like to get in touch with a good man who would like to take an interest in a small plant. A number of improvements will be made in the plant during the winter months.

The Buckeye Clay Co., near Uhrichsville, Ohio, reports a very successful year. This company was established in 1892 and has an abundance of coal and clay for a generation to come. It is now under the direct management of W. K. Eckfeld, president; C. E. Eckfeld, general manager; Theodore Schug, factory superintendent; and other members of the board of directors.

E. O. Smith, 672 Cecil Ave., Louisville, Ky., who has been for many years engaged in the slack barrel business, recently sold out his cooperage plant and is now investigating with a view to establishing a drain tile plant in the Green River territory near Livermore, Ky. Mr. Smith has 800 acres of land in that territory, and a number of others who have extensive farming lands of a character that could be improved by draining have made the suggestion to him that he set up a drain tile plant for local production of this product.

Many of the pottery manufacturers of the East Liverpool, Ohio, district are equipping kilns to use fuel oil and coal instead of the natural gas, the supply of which is now limited. Difficulty is experienced in obtaining coal. Potteries have just begun to ship orders placed this season and some companies have orders six to nine months ahead. Railroad cars have not been provided to meet the demand for all shipments. The new agreement between the United States Pottery Manufacturers' Association and the National Brotherhood of Operative Potters, effective with November, carries wage increases to the workers.

R. R. Boswell, People's National Bank Building, Charlottesville, Va., is interested in a movement to erect a brick plant at that place.

The Globe Brick Co., of Kenilworth, W. Va., is constructing a new office building. It will be of white brick and will be equipped with all modern conveniences.

It is understood that the Bowers Pottery Company, of Mannington, W. Va., is about to erect a large addition to their plant to give them a much greater capacity.

Owing to increased production the Keystone Pottery Company, Trenton, N. J., manufacturers of sanitary earthenware, is erecting a large, new kiln shed on New York avenue.

Garland Shields has succeeded to the active business management of the West Point Brick & Lumber Company at West Point, Ky., following the death recently of Mr. A. F. Kleymeyer.

The will of Joseph H. Spear, former president of the Washington Brick, Lime and Sewer Pie Company, Spokane, Wash., was recently probated. The entire estate, valued at $150,000, was left to his wife.

The Brinkley Brick & Tile Company, of Coleman, Texas, will install a new equipment for the manufacture of hollow tile and building brick. The drying capacity will also be increased from 30,000 to 60,000 brick.

The new dry press brick plant of the Comanche Brick & Tile Company, of Lawton, Okla., is now running smoothly turning out 25,000 brick per day, with enough orders in sight to keep busy for some time to come.

Marion W. Blair writes that he has recently become associated with the Suburban Brick Company and will have the management of their plant at Moundsville, W. Va. A number of improvements are being planned, including an equipment for the manufacture of hollow building tile.

W. E. Dunwody, president of the Standard Brick Company, of Macon, Ga., writes that they have had a very busy season and are still busy, although there has been a slump in building in that section. The price of brick in Macon and vicinity is $17 to $19 per thousand, at the kiln.

The plant of the Egyptian Unitile Co., of Uhrichsville, Ohio, was destroyed by fire recently, causing a loss of $35,000. The plant will probably be rebuilt. A. V. Donahey, who was recently defeated for Governor of Ohio on the Democratic ticket, is the owner of the plant.

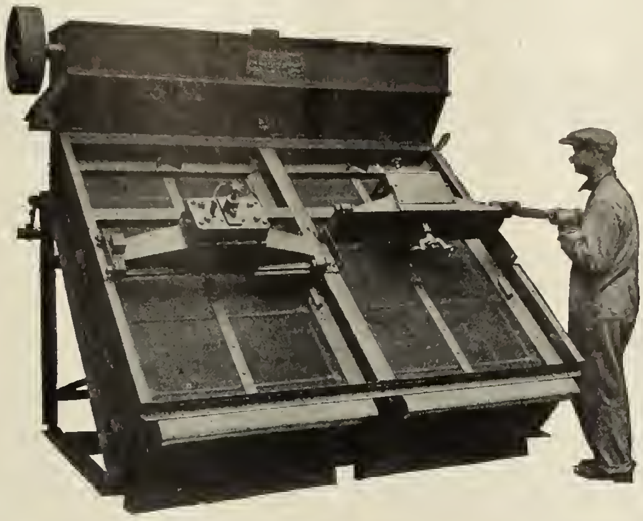
The Maddock Pottery Company, of Trenton, N. J., who have just completed the erection and installation of new equipment which will run close to $500,000 dollars expect to start the actual operation of this new addition this week, and will make the same line of pottery ware that they have been making in the past.

Operations are being started for the erection of a new plant for the Mason City Brick & Tile Company, of Nevada, Iowa. Bids are now being received by the company and actual building operations will start very shortly. It is the aim of the company to manufacture the very best line of brick and building tile.

Recently the Lock Haven (Pa.) Brick & Tile Company advertised for sale an American four-mold dry press, which they found they did not need, with the result that a buyer was found for same in Cuba. Moral: If you have any machinery around your plant that has been discarded for any reason, turn it into money through a For Sale ad in The Clay-Worker. Or if you want to buy good second-hand machinery, scan the For Sale ads carefully, and if you do not find what you want, run a Wanted ad.

Charles J. Anderson, manager of the Marinette Iron Works, Marinette, Wis., writes that his company has had a wonderful year with their conveyor. Mr. Anderson is now in New England, where the conveyor has proved very popular. He thinks by next year there will be very few yards in the New England district that will not be equipped with the Anderson conveyors. At present time conveyors are being installed at Baton Rouge, La.; North Adams, Mass.; Hartford, Conn.; Portland, Me.; New Britain, Conn.; Holyoke, Mass., and they recently received an inquiry from Poznan, Poland.

HUM-MER INCLINED SCREEN



Vibrator on top of screen, accessible for adjusting intensity of screen vibration.

Vibrator "tilted" back to remove screens

A FEW PROMINENT USERS
OF *HUM-MER* SCREENS

Bethlehem Steel Co.
Pittsburgh Plate Glass Co.
Arizona Copper Co., Ltd.
Ottawa Silica Co.
The Belden Brick Co.
Morris Fertilizer Co.
Goodyear Tire & Rubber Co.
American Smelting & Refining Co.
Continental Portland Cement Co.
Laclede-Christy Co.
The Norton Co.
Diamond Alkali Co.

"Makes wire cloth screen faster and wear longer"

"Tilting" Vibrator

Dust-Proof—Accessible—No Lubrication
Free from contact with material

THE electro-magnetic vibrator of the HUM-MER Inclined Screen is the most simple, positive and effective means ever developed for vibrating a wire cloth screening surface.

It is placed above the screening surface, free from contact with the material being screened; is enclosed in a metal, dust-proof housing; is in plain view of the operator; and accessible for instantaneously adjusting the intensity of screen vibration, by hand wheel.

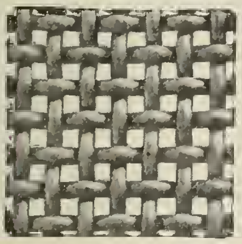
Furthermore, the HUM-MER Electro-Magnetic Vibrators require absolutely no lubrication!

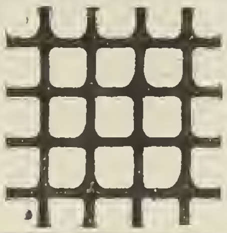
When it is desired to change a screen cloth in the HUM-MER, it is merely necessary to "tilt" the vibrator (*as shown in the illustration*) and lift out the screen.

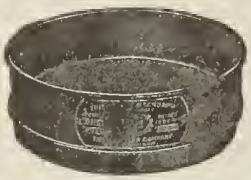
HUM-MER vibrators assure continuous operation and increased profits for the user.

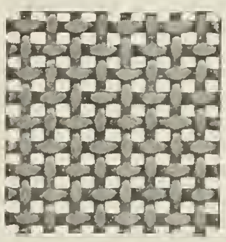
Write for HUM-MER Catalogue 42 W

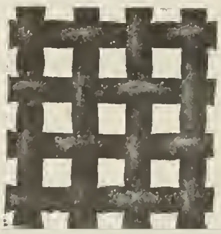
THE W. S. TYLER COMPANY, *Cleveland, Ohio*
Manufacturers of Woven Wire Screens and Screening Equipment











Webster's Continuous Down Draft and Continuous Muffle Kilns

Patented in United States, Canada and Great Britain. Marvels of ingenuity and simplicity. Pronounced by experts to be the most perfect and cheapest kilns to construct and the most economical to operate, ever invented or put upon the world's markets.

Equally as economical for burning any class of goods from common bricks to the highest grade ceramics, glazed ware, etc.

HENRY WEBSTER AND SONS,
628 Lexington Avenue, Newport, Ky.

Kiln specialists and consulting engineers. Forty years of practical experience in clay products industries and continuous kilns.

Members N. B. M. A. U. S. A, Institute of Clay Workers Great Britain.

Blue prints of kiln can be seen at Clay-Worker office, Indianapolis, Ind.

HIGH GRADE ⌀ ⌀
⌀ ALBANY SLIP CLAY

Pottery, Tile and Porcelain manufacturers, who want a high grade slip clay for strictly high class ware will find our clay unequaled for uniformity. It is not the cheapest but it the best of all American Slip Clays.

Analysis and Prices on request.

JOHN H. JACKSON TILE CO., Inc.
ALBANY, N. Y.

With Chase Flexible and Reversible Bearing and Folding Deck.

Single, Double and Triple Deck Dryer Cars, Transfer and Dump Cars, Turntables, Switches and Trackage.

The Chase Foundry & Mfg. Co., Columbus, O.

NEWS FROM DIXIE LAND.

BRICK AND MATERIAL interests around Memphis find activities hardly so great as expected for the autumn season, yet many brick jobs are in progress in Memphis and neighboring towns and a large amount of material in the nature of tile, terra cotta, sewer pipe is moving and at a strong market. The low price of cotton is having some effect in the Mississippi Valley, but the farmers have gotten such good prices the last several years they have plenty of money and collections are good. It is a fact, however, that the crop of the present year has been an expensive one to make, and if it is sold without a profit no doubt a curtailed crop will be the result next year and possibly a curtailed business. Wood-working products are said to be off. Labor is still high but not as scarce as it was, as many of the industries hereabouts have laid off men. For about sixty days before the election a repressed trade condition set up, but it is looked now for this to be rapidly dissipated. The bricklayers have asked a raise effective January 1 from $1.25 to $1.50 per hour.

The Memphis Brick Supply Co. at the Goodwyn Institute, Memphis, report brick trade quiet, but they have been finishing up some very large contracts and with the fine weather conditions that prevail look to see considerable fall and winter building. They handle the line of the Herbert-Fischer Brick Co., manufactured in Memphis. That plant is extending its continuous kiln system. They also handle the Bush brick out of Nashville; the Hydraulic Press Brick Co. line out of St. Louis, which concern now has twenty-two active plants. They are agents here for the Northwestern Terra Cotta Co. They furnished the material of this kind on the handsome new Pantages Theatre being finished on South Main street.

The Moss-Devoy Brick Co. are manufacturing common brick at their plant in North Memphis.

The Fischer Lime and Cement Co. have not yet finished their new large warehouse addition on Walnut street but it will be in a month or so, and will be one of the largest and finest structures of the kind in the South. They in common with other material dealers report very good trade in sewer pipe, drainage tile, fire brick and terra cotta products, and anticipate a much larger trade next year.

In the line of fancy pottery goods a very beautiful display is being carried in Mulford's jewelry store on South Main street, of the Rookwood pottery line.

At Nashville, a new $100,000 church will be erected at the northwest corner of Twenty-first avenue and Dixie place, to be the home of the Broadway Presbyterian Church and the Grace Presbyterian Church. C. K. Colley is the architect The materials will be of stone and mat brick. The building will be three stories, 64 x 98 feet.

The Massee Brick and Tile Co., at Macon, Ga., is featuring hard burned brick and building tile in the Southeastern trade, and reports good activities. DIXIE.

BE SURE IT'S SCHURS.

As the coal situation becomes more and more acute, the clayworkers are turning their attention to the use of oil for burning, particularly in localities where oil is available at a price that justifies its use. The Schurs Oil Burner Co., of Los Angeles, Cal., has met with great success of recent years with their oil burner which is particularly adapted to brick and pottery kilns. Over sixty thousand of their burners are now in use, and they are willing to increase this number very materially. Any one interested in burning with oil will do well to get in correspondence with them. See ad on page 451.

Perversity is that thing in human nature which prevents us from knowing when we are well off—till afterward when we are not.

THE UNDERWOOD PRODUCER GAS BURNING SYSTEM

PATENTED

This system represents the development of fundamental principles of the application of Producer Gas to a great variety of furnaces in widely diversified industries. These principles with the highly developed equipment for applying the gas stimulate and extend the use of raw producer gas as the ideal and economical fuel. Industries that have used producer gas for many years have found new and wonderful economic improvement by the use of this system.

In the Glass Industry which is closely allied with the clay industry marvelous improvement has been made in many furnaces with highly beneficial results.

In the production of Carbon Products this system has been highly successful in reducing the baking time, saving fuel and eliminating the use of fuel oil to secure the finishing temperature thereby making the economic and practical results most satisfactory.

In the enameling of metal ware the furnaces are operated with much less fuel and their efficiency has been materially increased.

Furnaces used for roasting Ores, only operative formerly with Natural Gas have been made more successful by the use of producer gas applied by this system.

Railroad Continuous Tunnel Kilns, operating dangerously near failure, have been made successful by the application of producer gas under this System.

For operating periodic kilns, both up-draft and down-draft, this producer gas burning system is superior to all other methods of firing.

On your request we shall be pleased to have our Engineer's investigate your conditions. Write us about your burning difficulties.

THE MANUFACTURERS EQUIPMENT CO.

DAYTON, OHIO, U. S. A.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.

BUILDING OPERATIONS in Evansville and other southern Indiana towns have been fairly active during the past month and the ideal weather that has prevailed has had the effect of stimulating building to a certain extent. The building in the main in Evansville is mostly of a commercial nature, such as the construction of new factories and additions, although there has been some building of homes in that city. The largest construction job in Evansville this year is the New Victory Theater and hotel at the corner of Main and Sixth streets, that is expected to be under roof by the first of the coming year. This building will cost in the neighborhood of $700,000 exclusive of the real estate. Several modern brick residences are being built in Evansville and the brick for most of these jobs has been furnished by the Standard Brick Manufacturing Company, of which Henry C. Kleymeyer is president and general manager. This company also is furnishing the brick for the Frederick Douglas High School, on Clark street in that city, as well as the new addition for the Vulcan Plow Company, which has virtually been completed. Contractors say that they can not recall a fall when the weather has been so perfect for building purposes and they say that in the event of an open winter that there is likely to be considerably more building than there was last winter.

Contractors and architects are of the opinion that the year 1921 will witness more residence building in southern Indiana towns than the present year. There has been some drop in the prices of building materials and it is believed that prices have fallen to about where they will remain for some time to come. There is no question that many people who had planned to build homes this year postponed the matter until the coming year in the hope that prices would get better. During the past year several building and loan associations have been formed in towns in this part of the state and it is expected that these associations will be a great stimulant to building during the next few years. As the result of the scarcity of houses in Evansville and other towns rents have steadily increased. It is almost impossible at this time to rent a house in Evansville. Several real estate men have taken advantage of the situation and have remodeled many pieces of old property and now have the "For Sale" sign hanging on them. They are refusing to rent these pieces of property, believing that now is the logical time to sell them as many people who find they cannot rent property will, in their desperation to get a roof over their heads, buy remodeled or worked over property.

Brick and tile manufacturers who had a hard time to get plenty of good labor during the summer months, say that there is no longer a labor shortage, but on the other hand, there are quite a number of men who are seeking employment. Many of the large manufacturing plants are cutting down their working forces and in some instances are running on shorter hours than they did two or three months ago. It is believed there will be quite a curtailment during the winter months, but by spring there ought to be a different situation. While there is a disposition to get back to normal or prewar conditions, it is not believed by the manufacturers of this section that wages will ever go back to the basis that existed before the starting of the last great war. Nor do they believe the prices of building materials will get back to where they were before the war. In many of the towns and cities in the tri-state section building corporations have been either planned or started and because of these organizations, it is pointed out that building is bound to take new life during the coming year. There is a feeling among many of the manufacturers that there will be a coal shortage before next spring and that unless a large number of manufacturing plants run on part time or cut their force, the situation may grow intense. The car shortage situation has not given the manufacturers any great concern for the past several weeks.

The Cannelton Sewer Pipe Company, at Cannelton, Ind., a few days ago sold the big five-ton Pierce-Arrow truck, which they bought some time ago, trading it for a new two-ton Pierce-Arrow. The company found the truck too large for the roads in southern Indiana and especially in Perry county, and for that reason decided to get rid of it.

Lee Brenner, manager of the Cannelton Clay Products Co., of Cannelton, Ind., reports that his plant has been enjoying an unprecedented rush in orders for fire brick. The plant now is shipping about ten cars of fire brick a week to all parts of the country. The Cannelton made brick ranks with the best products of the country.

Henry C. Kleymeyer, president and general manager of the Standard Brick Manufacturing Co., at Evansville, is on the committee that was named recently by Samuel L. May, president of the Chamber of Commerce at Evansville, to work out plans for a bridge across the Ohio River at Evansville. The estimated cost of the bridge is four million dollars. The committee will go to Washington, D. C. within a short time to try and interest the federal government in the building of the bridge. The state legislatures of both Indiana and Kentucky also will be asked for financial support for the bridge.

A. HOOSIER.

SIL-O-CEL Insulation

prevents heat losses from crowns and walls of kilns boilers and all types of heated equipment.

Write for Bulletin F54 describing its advantages and, application.

CELITE PRODUCTS COMPANY

New York
Philadelphia
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Chicago
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Los Angeles
San Francisco

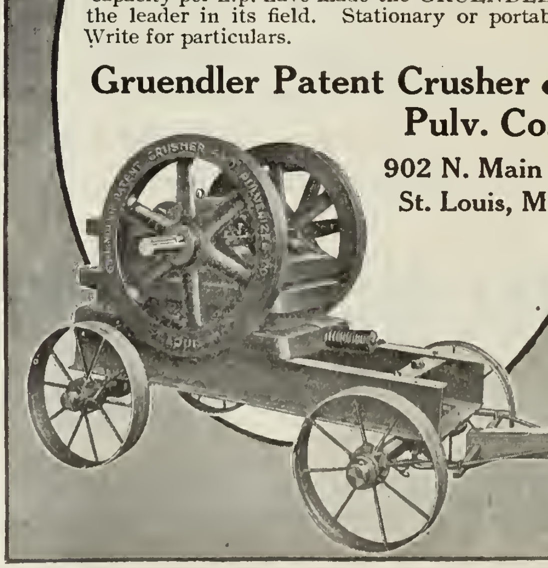
THE GRUENDLER JAW CRUSHER

GRUENDLER

Crushers are demonstrating their ability to increase production and reduce operating costs for hundreds of Brick Plants. These mighty machines reduce large or small pieces of clay or other brick material for mixing before entering drying or wet pans. Freedom from repairs and capacity per h.p. have made the GRUENDLER the leader in its field. Stationary or portable. Write for particulars.

Gruendler Patent Crusher & Pulv. Co.

902 N. Main St.
St. Louis, Mo.



Just off the press—

Type "B"
ERIE
Shovel

GENERAL DESCRIPTION OF STANDARD "B"
AND HIGH LIFT "B" ERIE
BULLETIN S-16

Full of practical information—the best bulletin that we have ever published on the ERIE Shovel

SHOWING what you can do with an ERIE—Digging clay or shale; stripping off earth or rock overburden; handling coal from cars to storage piles with clamshell bucket and rehandling for use—each class of work is clearly illustrated by large photographs. The descriptions are brief and to the point.

We will be glad to send you a copy, without any obligation on your part. Write your name on thecoupon and mail to

BALL ENGINE CO., ERIE, PA., U.S.A.

Builders of ERIE Steam Shovels; Locomotive Cranes; ERIE Railway Ditchers

TEAR OFF COUPON.

BALL ENGINE CO., ERIE, PA., Gentlemen;
Please send your new bulletin advertised in The Clay Worker
Name ....
Address ....
....

THE ANNEX

NEW YORK

WHEN Hotel McAlpin acquired The Annex, formerly the Martinique, there was established, first the spirit of enthusiastic attention that never fails to assure a guest that his patronage is valued.

Following closely upon this first important step came others which have proved equally successful—among them an expert Bureau of Information and Assistance which enables a guest to leave the details of his arrival, departure and trips he wishes to make to people who are able and willing to assume them.

Under the direction of L. M. Boomer
Frank E. Jago, Resident Manager

32nd Street and Broadway

OHIO CLAY NEWS.

THE CANTON (Ohio) Brick and Fireproofing Company, incorporated for $250,000, has purchased the 40 acre property of the Home Brick Company here, for $100,000, according to announcement today by J. H. Rainsberger, of the firm. The new company was recently incorporated with Dr. William DeMuth, of New Philadelphia, O., as the principal stockholder. The property acquired from the Home Brick Company will be improved and many new buildings erected. It will be placed in readiness for operation about January 1. The property comprises 40 acres, 25 of which is a clay bank. Office buildings, kilns, and other buildings in readiness for use are already on the property. Dr. DeMuth is a prominent brick manufacturer, banker and physician of New Philadelphia. Although his business activities engage a great deal of his time he is ranked as one of the leading physicians of the state. It is understood that he will spend a great deal of his time in Canton looking after the new concern. I. W. Royer, George E. Arnold, and other Canton men are associated with him in the corporation. John Wynn is president of the Home Brick Company and E. W. Jones is secretary.

The Unitile Company's plant, Uhrichsville, owned by Vic Donahey, defeated Democratic candidate for governor, and his brother, Harold Donahey, was partially destroyed by fire last week, entailing loss of $10,000. The power house at the plant was almost a total loss. A large stock of fancy tile was totally destroyed by the flames and water. The plant was referred to frequently by Harry L. Davis, governor-elect, during his campaign. It is not known whether or not the plant will be rebuilt.

The new plant of the Davis Porcelain Company, East Liverpool, located at Chester, W. Va., across the river from here, will begin operation about December 1, Willis Davidson, president and general manager, announced this week. Delay in delivery of equipment is causing the tie-up, it is said. Shipments of flint and clay already have been received. The plant will employ 50 at the start. The plant will manufacture electric porcelain supplies.

Thomas E. Thomas, 59, president of the Niles Fire Brick Company, and director and vice-president of the Mahoning Steel Company, died at his home at Niles, Ohio, Wednesday, November 10, following a long illness of heart trouble. Mr. Thomas built the first blast furnace in Niles and was identified with many concerns here.

Two clay plants owned by the American Vitrified Clay Product Company, near Uhrichsville, were shut down early in November by the company after demands for its recognition had been made by the clay workers' union. Two hundred and fifty men are idle. With a better car supply clay plants are pressing out their book orders and garnering new ones for future delivery. It will require one sewer pipe works three months to wipe off its order sheet. No business let up is in sight, say clay manufacturers, who expect 1921 to be a banner year in the clay industry.

The factory of the Bolivar Brick Company, financed by local and Mineral City, Ohio, capital, has closed down for an indefinite period. REX.

MOVES FROM NEW YORK TO CLEVELAND.

The American Dressler Tunnel Kilns, Inc., formerly at 171 Madison Ave., New York City, announces the removal of its executive, engineering and thermal offices to 1740 East Twelfth St., Cleveland, Ohio, where visitors and particularly those seeking knowledge as to the advantages of the tunnel kiln will be welcome.

Engng. Lit.

THE CLAY WORKER

Christmas

1920

The Christmas Spirit

As a Christmas message we offer the thought that the greatest gift is the gift of understanding. The sentiment of the Christmas season is that of giving and forgiving, and striving for a better feeling toward each other among mankind. Therefore, since it is well known that from the days of Babel down to the present time most of the troubles and dissensions of mankind have come from lack of proper understanding of each other's motives, desires and rights, it is easily evident that if we can cultivate that gift of understanding which makes for more friendly relationship and better operation we will have attained a distinct progress toward that goal of "Peace on earth, good will toward men."

T·A·RANDALL·&·CO
PUBLISHERS·INDIANAPOLIS

Published monthly. Subscription price, $2.00 per year. Entered as second class matter, January, 1884, at the post office at Indianapolis, under the act of March 3, 1879. Title registered and contents copyrighted by T. A. Randall & Co., 1919.

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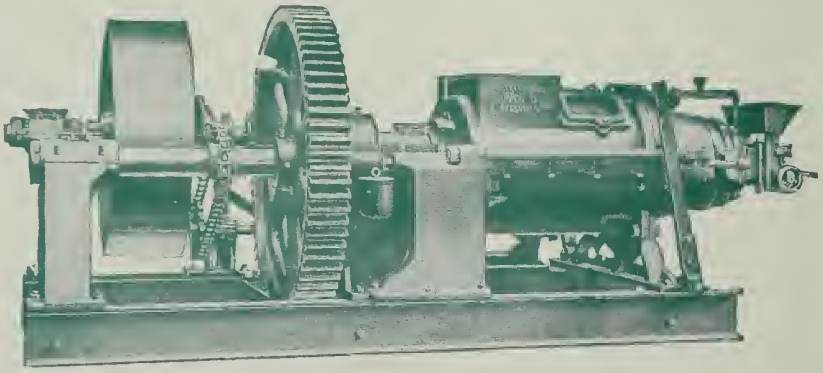
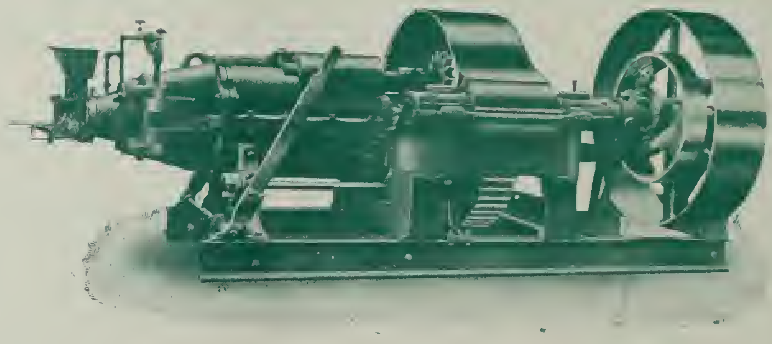
Direct Geared Machinery for Brick Plants

We do not claim to be the originators of the Single Geared Machine, the first brick machine ever built being of that type. We have, however, so proportioned the gears and pulleys as to get the best results. Some of the advantages are: Saving in Power, Quiet Operation, Greatly Reduced Repair Costs, Operation at High Speed without Damage. All very essential during these times. If weary of the vibration, hammering and breakage of an old compound-geared machine you will not regret having investigated the Steele Direct Geared Machines. We present cuts of a few machines below.

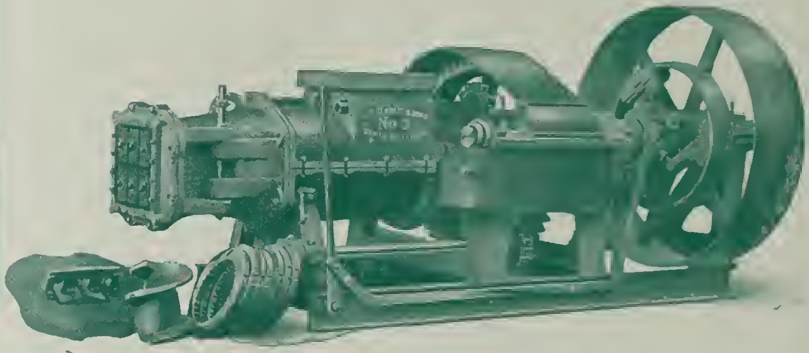


Miniature Cut of
No. 6 Machine, Side or Endcut.
Capacity, 15,000 per Hour.
A Mighty Machine.



Four Sizes of this Machine
Side or Endcut.

Oil Dies of Improved Type Side
and End Cut.



Several Sizes of Tile and Block Machines.

J. C. STEELE & SONS **Statesville, No. Carolina, U.S.A.**

CLAYWORKING MACHINERY

Western Representative: Geo. H. Smith, 3309 E. 37th St., Kansas City, Missouri
Northern Agents: The Manufacturers Equipment Co., Dayton, Ohio

Mention The Clay-Worker.

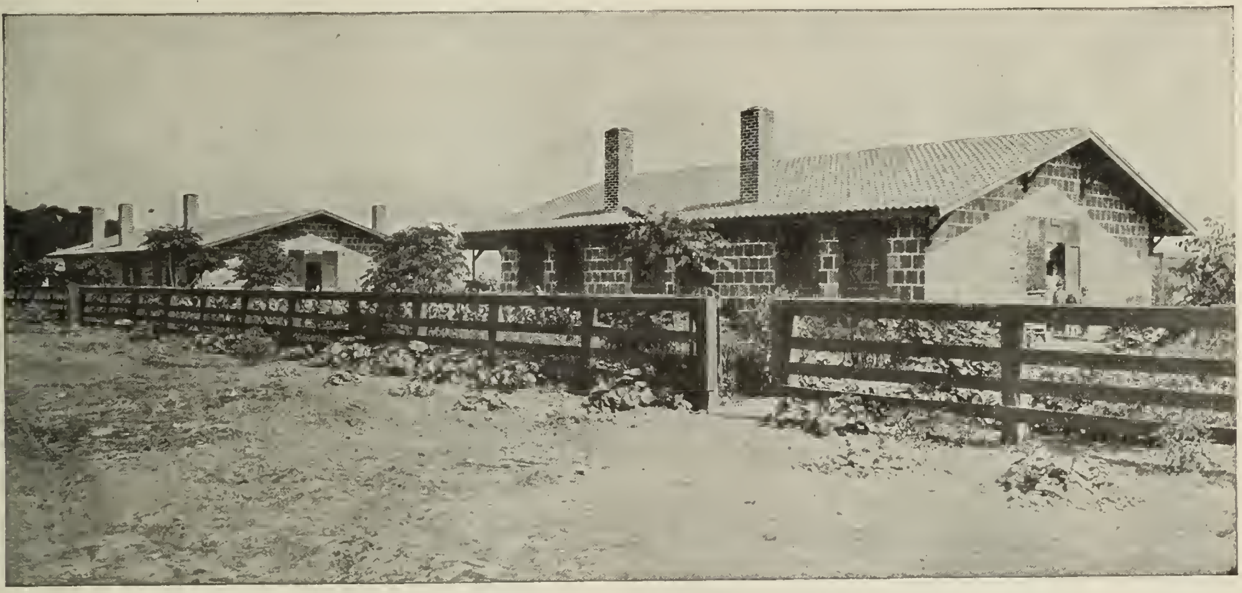
THE CLAY-WORKER

THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 74 INDIANAPOLIS, DECEMBER, 1920. No. 6

HOLLOW TILE: Growing in Favor In the Pacific Coast States. Climatic Conditions Make this Burned Clay Product Especially Desirable. Specimens of Hollow Tile Bungalows and Other Buildings that Prove the Growing Popularity of Hollow Tile.

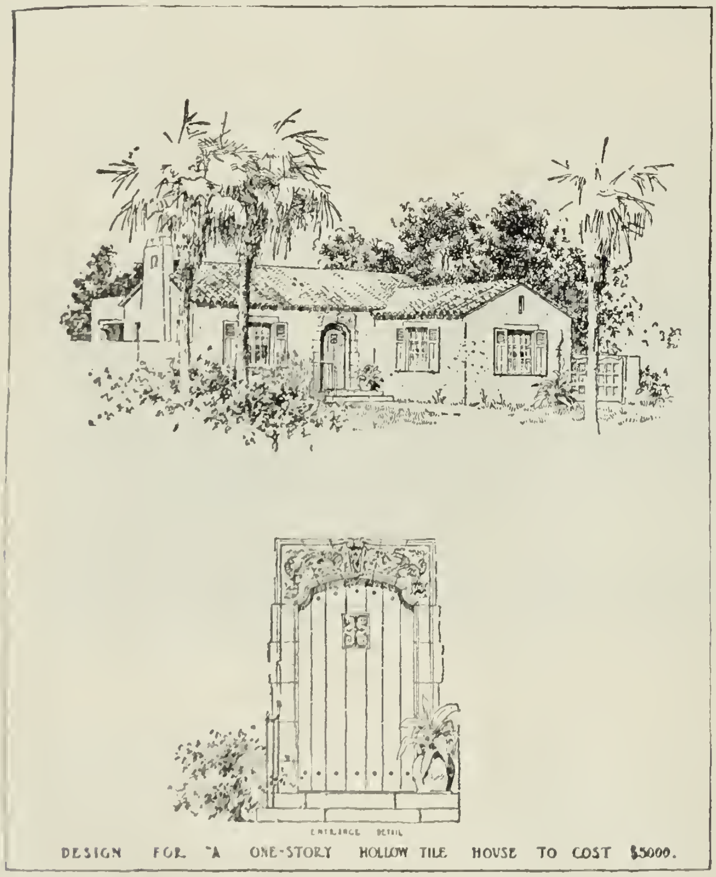
THE PROGRESSIVE FIRM, the Los Angeles Pressed Brick Co., with plants at Los Angeles, Alberhill and Santa Monica, California, is reaping a real harvest from their publicity campaign waged during the past few years. Their materials are much in demand on the Pacific Coast, hundreds of structures have and are being erected in which their products are the principle ones used. This firm manufactures pressed, enameled and face brick, fireproofing refractories, roofing mantel, faience and quarry tile, sewer pipe, architectural terra cotta and hollow building tile. However, their hollow tile is receiving the chief attention at this time, due to the widespread popularity of this material in California.



Hollow Tile Houses for Employes of Pacific Electric Railway at Zelzah, Calif.

Owing to climatic conditions, hollow tile has proven especially welcome throughout southern California and Arizona. Buildings can be erected there at a very low first cost. The walls do not need to be as thick nor as substantially built as in the colder sections of the country, so that a wall of hollow tile covered with stucco is a permanent substantial structure their products are the principal ones used. This firm manu- conditions that a well built brick building or hollow tile with brick veneer structure assures in other sections of the country, and the low first cost is an item of much advantage for it makes the final cost that much lower. The difference between final cost of hollow tile and frame construction is less than it has ever been, being now only about 2 per cent. difference in

"Heath" Hollow Tile Home on Adelaide Drive, Santa Monica, Calif.


ENTRANCE DETAIL
DESIGN FOR A ONE-STORY HOLLOW TILE HOUSE TO COST $5000.

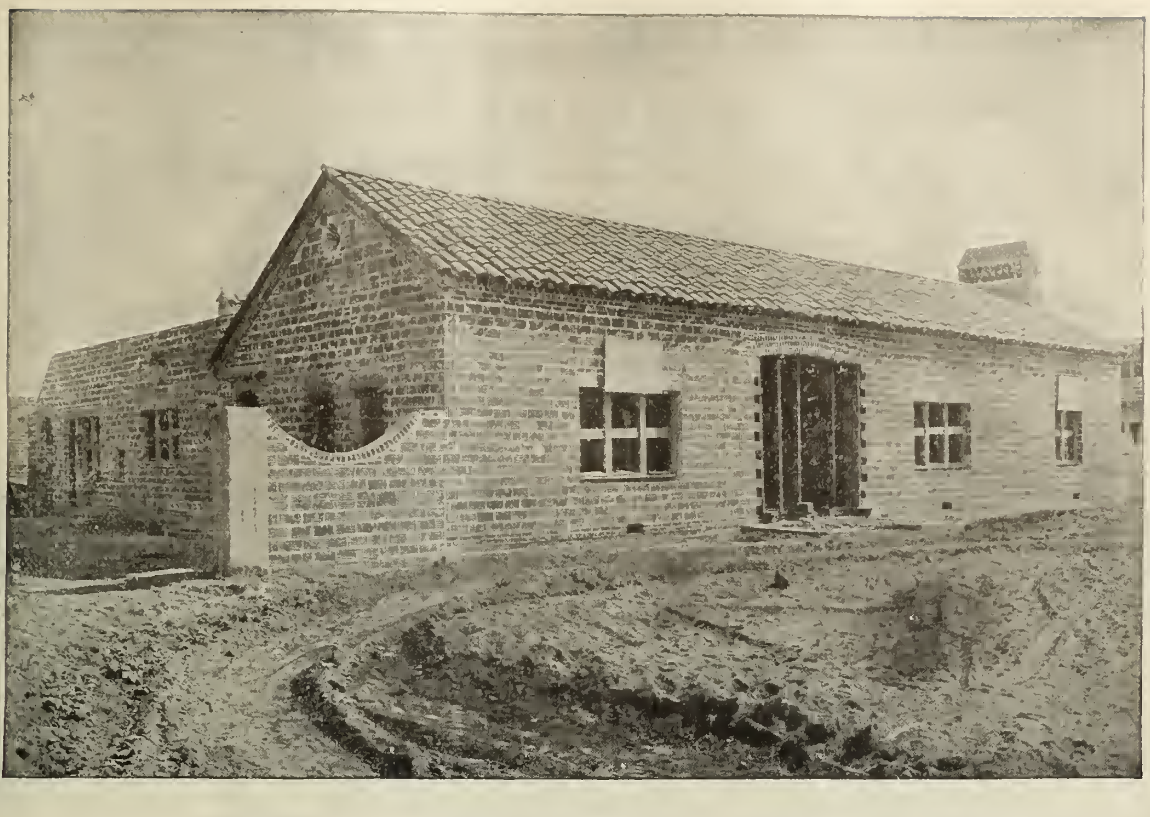
First Prize Design in Hollow Tile House Competition.

favor of frame construction. That is in the first few years of the life of the building, but in the long run hollow tile structures are by far the less expensive and have many advantages over buildings made of a "combustible material," like lumber.

Hollow tile, the product of intense heat, is positively fireproof, the cost and amount of insurance is therefore reduced to a minimum as is also the depreciation factor. Repairs and painting costs are practically eliminated. By reason of its dead air cells, hollow tile provides insulation against heat, cold and dampness and affords a pleasant cool interior in even the hottest weather. Due to the same principle, which is likened to a thermos bottle, the cold of winter cannot penetrate, which means minimum fuel cost for heating. It costs today little more than well built frame, will not warp, sag, expand or contract and is proof against dry rot. It is readily adapted to every style of architecture, is extensively used for every class of building from modest bungalow to palatial mansion, from factory, store and warehouse to school and church and to the fireproofing and construction of steel frame and reinforced concrete structures. Its uses today extend from farm, where it is used for silos, barns and farm buildings of every kind, to towns, both rural and industrial, and to great cities throughout the United States where it is extensively used in present-day building activities.

The above are arguments used by the Los Angeles Pressed Brick Co. in their publicity campaign, carried on through newspaper, leaflets and catalogs.

But they did not stop with this fine boosting, although it was very effective. They promoted and carried to a successful conclusion an interesting contest under the auspices of the American Institute of Architects, an architectural competition for the best designs



Hollow Tile House Before Plastering. See Illustration on Opposite Page.

for a $5,000 hollow tile house.

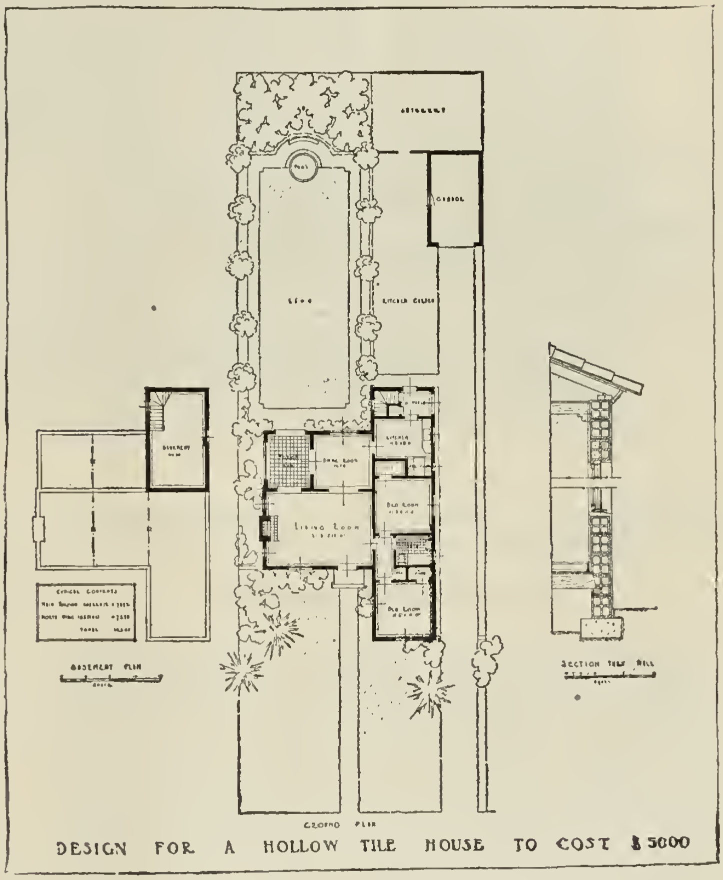
This competition brought out many original, practical ideas, a large number of excellent designs being submitted. We publish herewith the designs which were awarded first and second prizes.

The requirements of the competition were in brief: a one-story house, exterior wall to be of 8-inch hollow tile, roof to be of clay tile, total cubage of house not to exceed 16,500 feet, inclusive of porches, basement and roof spaces, the actual cost complete not to exceed $5,000, inclusive of heating, plumbing, electrir wiring and painting. House to be located on a level inside suburban lot with eastern frontage of fifty feet and depth of 150 feet. The plan of the house to be suitable for a family of moderate means and to comprise not less than five rooms. Such a house ordinarily requires only 2,200 tile, the cost of which delivered is approximately $250.

This competition stimulated a wide interest in hollow tile which was carried on by liberal newspaper space in three of the Los Angeles papers.

There is such a demand for this material that the Los Angeles Pressed Brick Co. turned over the entire production at their Santa Monica plant to hollow tile. They have been producing there a capacity of about 3,000 tons a month exclusively on hollow tile, and this is about half of their total monthly output. They could sell at least a third more tile than they have been able to manufacture and deliver.

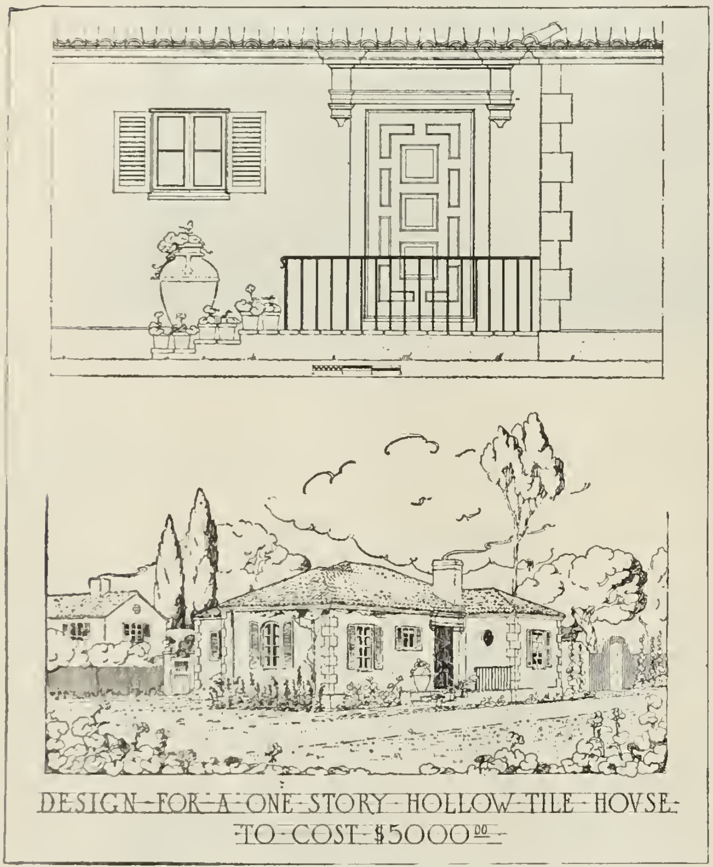
On May 31, 1920, the Los Angeles Pressed Brick Co. had unfilled orders for over 20,000 tons of hollow tile which was about 200 to 300 per cent. above normal times and they have not been able to reduce the ratio



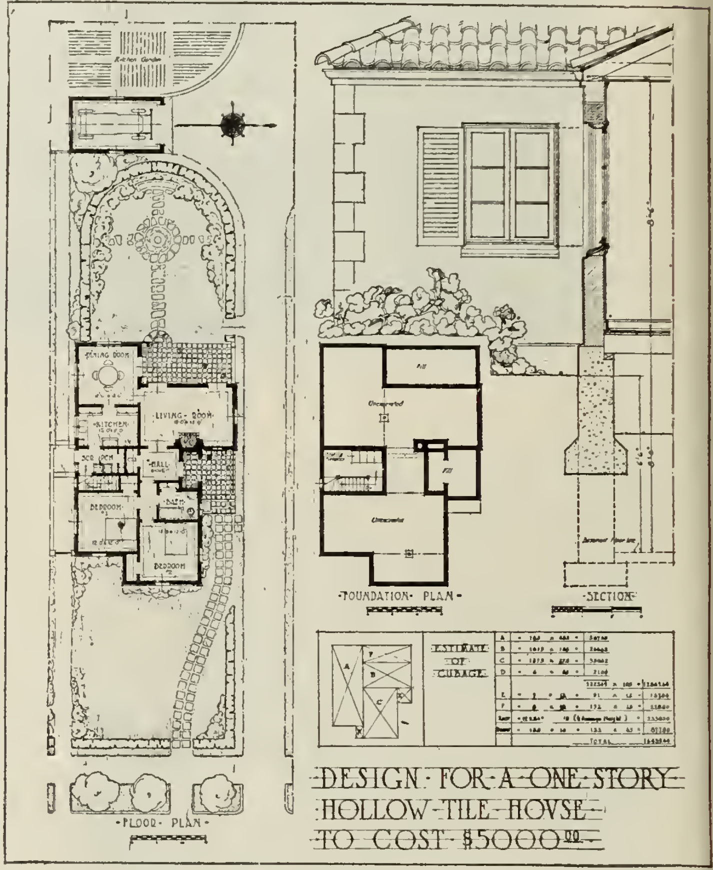
Floor Plan of First Prize Design.

to any appreciable degree. This shows the widespread use of hollow tile in California and the benefits to be derived from an active well centered publicity campaign.

The United States Government has and is using an enormous amount of hollow tile on the Pacific Coast. Permanent hollow tile buildings erected by the United States Government at North Island, Calif., represents an investment running well into the millions. These include the permanent buildings for the Army Aviation Field, North Island, and the New Marine Corps Base, San Diego. In addition to nearly four hundred heavily loaded cars of hollow tile, the Los Angeles Pressed Brick Co. furnished all roofing tile and other clay products used. Another example of hollow tile construction by the Government is Fort Whipple Barracks, Prescott, Ariz. Here also the Los Angeles Pressed Brick Co. furnished thosuands of tons of hollow tile for use in construction of nearly a score of buildings.



Second Prize Design in Hollow Tile House Competition.



Floor Plan of Second Prize Design.

TO BUILD OR NOT TO BUILD.

Will building materials be cheaper next spring? That question is being revolved by those whose housing problem is not solved. Recently common brick tumbled 25 per cent over night, from $30.75 a thousand to $22.70, delivered on the job. This has raised hopes of similar decreases in the case of other materials. But, as The Engineering News-Record notes, brick has been relatively higher in price than most building materials have been. In early 1914 brick sold alongside dock in New York at $5.50 a thousand, against the recent price of $25. So brick is still high.

So are the other building materials. Consider cement. In the spring of 1915 it sold for 62 cents a barrel at the dock, against the present price of 4.10 on the job. Cement manufacturers have contended with an acute car shortage and the cost of coal has been exorbitant. Every dollar added to the price of coal adds five cents to the cost of a barrel of cement. Nevertheless, the price of cement is high.

How about sand, gravel and crushed stone? Gravel sells for $3 a cubic yard, against $2 one year ago; sand at $1,50, against $1.25; crushed stone at $2.10, against $1.75 to $1.85. All these prices represent heavy advances over pre-war figures.

Business is once more supposed to be operating on a supply and demand basis, but the belief is common that producers, in formal and informal combination, prefer a small business with large profits to a big business with small profits. Anyway, the camel's back is bending perilously. Construction work is meager everywhere. That producers and dealers in building materials will endure for any great length of time a market made stagnant through high prices is not likely. The deadlock, it may be predicted, will soon be broken.

Now comes the inevitable question: "To build or not to build next spring?" The easiest answer is, "Wait and see, and then decide." But many must know beforehand. Probably the best advice that can be given at this time is to go ahead with projects, for otherwise they will be compelled to wait until the spring of 1922.—N. Y. Tribune.

BRICK MANUFACTURERS GETTING IN LINE.

The lumber people have heretofore done well in promoting the use of their products through plan books, but now the brick and hollow building tile people are getting into action with this idea, which speaks well for better building in the future and for the better use of permanent fireproof building material.

AMERICAN ENGINEERING COUNCIL OF THE FEDERATED AMERICAN ENGINEERING SOCIETIES FORM NATIONAL ORGANIZATION.

THE AMERICAN ENGINEERING COUNCIL of the Federated American Engineering Societies was organized in Washington on November 18 and 19, when engineers and scientists from all parts of the country held a meeting at the New Willard Hotel in that city to form the new body. Organizations with a total membership exceeding 100,000 were represented through the delegates.

The united engineering forces of the country will combine in a great national program of public service, it was announced at the gathering. It is the intention to form a super-engineering organization through which the efforts of the organized engineers of the nation will be enlisted in behalf of a constructive program of public service.

Among the chief features of the proposed program were: Conservation of the nation's resources in coal, oil, timber, water-power, etc.; immediate work upon the national problem of transportation; a movement toward the solution of the relations between capital and labor in which the engineer, from his comparatively impartial point of view, is believed to be especially equipped to make recommendations; creation of a national public works bureau by means of a recognition of the Department of the Interior; co-operation with the drafting bureau of Congress in its work of preparing for a national budget system, and other important legislation.

Among the speakers of national note was Herbert Hoover, whose address on "Some Phases of Relationship of Engineering Societies to Public Service," marked the close of the two-day session. "We have just passed," Mr. Hoover said, "through a period of unparalleled speculation, extravagance and waste. We shall now not only reap its inevitable harvest of unemployment and readjustment, but we shall feel the real effect of four years of world-destruction, and from it economic and social problems will stand out in vivid disputation." Suggestions made by Mr. Hoover to clarify the labor situation included the establishment of two or three levels of wages in each trade, the position of each man in such scale to be based upon comparative skill and character. This, he said, would revive self-interest and initiative. He also advocated the extension of the shop committee system.

Mr. Hoover, now head of the American Institute of Mining and Metallurgical Engineers, was chosen president of the new American Engineering Council of the Federated American Engineering Societies. Other officers elected were Calvert Townley, of New York, and William E. Rolfe, of St. Louis, vice presidents to serve for two years, and J. Parke Channing, of New York, and Dexter S. Kimball, of Ithaca, N. Y., vice presidents to serve one year. L. W. Wallace, of Baltimore, was elected treasurer of the new organization.

One of the Group of Attractive Tile Houses at Angeles Mesa, Calif., in Course of Construction.

CURING THE LAY-OFF HABIT.

The idea of paying a bonus for regularity at work is taking a fairly wide form in the industrial world. This is an idea that some brick manufacturers have been experimenting with for some time. It has its imperfections, but the lay-off habit has gotten such a hold on the workers of the country that the need of some remedy is easily evident. The remedy which has found most favor so far is that of paying a premium in addition to the regular wages for those who work steadily through the week without a lay-off. If some one has a better scheme for curing the lay-off habit the industrial world will be glad to hear about it, because this is one of the bad habits of the day which is proving a handicap to production.

FACE BRICK MANUFACTURERS'

Spirit of Optimism Pervades Entire Organization Meeting in Ninth Annual Convention at French Lick Springs, Ind., December 1st, 2nd and 3rd.

THE NINTH ANNUAL meeting of The American Face Brick Association was a success in every sense of the word. The attendance was large, the program par excellence and much important business was transacted.

Two hundred and ninety-seven face brick manufacturers and dealers were present, thronging the hotel lobby between sessions. The delegates to the two conventions numbered about fifty-fifty of the total registration. The American Face Brick Association membership totals 106, so that the attendance at French Lick could hardly have been more gratifying. Those present were real live wires who bubbled over with their enthusiasm and optimism. The time was ripe for a rock bottom, down to business convention, and the individual plant owners came with the fixed determination to investigate every possible angle of the business, get the other fellows' ideas and to work shoulder to shoulder in these critical days, so that the period of reconstruction, or rather rehabilitation, would be one of real progress in the face brick and material line.

Only a few of the members failed to be present and they were the only losers, for every one attending the conventions at French Lick Springs December 1, 2 and 3 received dollar value for every penny spent in not only the pleasure and business of the conventions, renewing old acquaintances, etc., but also becoming inoculated with the bouyant spirit which pervaded the air.

The outstanding features of the convention were the splendid addresses made by practical men and the spirit of cooperation that predominated the whole convention. The addresses were very interesting and instructive. The spirit of optimism that prevailed in each succeeding speech or impromptu talk built up the hopes of every delegate present, and since nearly every section of the country and parts of Canada were represented, the big benefit to be derived from this meeting will be the inculcation of this same spirit of hopefulness in the minds of all the face brick manufacturers and dealers of the country through word of mouth and the printed page, setting forth the real reason for the seeming depression, or rather deflation, in building operations; a mere matter of psychology or a state of mind which must be corrected. As one speaker remarked, the spirit of uncertainty in this country today is simply due to a state of mind which will be quickly changed when the real, actual facts concerning the stability of our government and the absolute certainty of the immediate return to sound business basis is understood. The all-important point is to see to it that this state of mind is changed through a propaganda of hopefulness.

French Lick Springs Hotel was headquarters for the two organizations, the face brick manufacturers meeting in the Assembly Hall, save for the divisional meetings, which were held in separate rooms.

The first session was called to order at 2:30 Wednesday afternoon, December 1, by President John H. Black. After calling of the roll and the reading of the minutes of previous meeting President Black read his address, which was as follows:

President's Address.

Gentlemen of the Convention:—

Probably the most important year of the Association is drawing to its close. Our Campaign of Publicity is on in full swing and has given to our use several fine and much needed text books while telling our story to millions of listeners in attractive manner. That they were waiting and are interested is proven by the many responses.

We have had a busy time since the close of the war and now enter the period of readjustment when every man must watch his step—practice economy and closely scrutinize his credits.

Like ourselves, manufacturers of all competing materials are and have been spending large sums of money in advertising their wares to the world. They are alert and far-seeing and so as we approach more normal conditions when the supply equals the demand we must carefully examine our plans to determine if we are fully prepared to meet and cope with the situation.

How can we take full advantage of the opportunity made possible by our publicity movement and not only hold our own but make substantial headway against any and all products cleverly exploited to take our place?

In my mind the most important feature to which we should turn our attention at this time is the matter of **service**. Are we giving sufficient care and thought to the all important point that our customer who in the final analysis is the ultimate consumer—the owner? The man who in reality furnishes the money to pay our bills, is he receiving our goods in the best possible condition just as he wants them and on time? Has he been informed of the manner they should be placed in the wall to give to him the most attractive finished result?

Do we fully appreciate and realize that a satisfied and happy customer becomes an enthusiastic salesman not only for the entire industry but for the particular plant which served him well?

Do we place the stamp upon our product which tells the world who made it and who will stand behind it for all time?

As our industry is now conducted there are two distinct and fundamental elements—the producer and the distributor. **Neither** one directly interested in the other and **each** one doing his part after the manner which seems to him best.

There is, therefore, generally speaking, a decided line of demarcation between these two elements which must be thoroughly bridged over if we are to obtain the best results. In the past and as a rule each element has perhaps necessarily been so fully occupied in working out his particular problems that *this line* has had but scant attention. Gentlemen, from this time on, it must have most serious attention.

Co-operation is the word. We must find the way to so join these two elements together in such sympathetic working arrangement that the necessities and troubles of each shall have the benefit of combined effort. We should understand each other better

AND DEALERS' CONVENTIONS

Face Brick Dealers Strong for Co-operation. Believing Great Building Era Just Ahead Make Plans and Lay A Firm Foundation for Future Work.

and work together in closer harmony. We can develop plans which will permit and require the distributor to know at all times the abilities and limitations of his every connection while the producer can carefully study and be kept thoroughly informed on the wants and needs of every market he proposes to enter. There should be frequent and constant contact and above all things we must avoid connections without thorough and complete investigation.

Why should not representative manufacturers and dealers get together in close committee conference and having their mutual welfare at heart in perfect frankness devise the proper method which will give to the buyer the best possible service to the end that every user of face brick becomes its enthusiastic friend?

The salesman, the man who deals with and develops the prospect, who looks after the job's progress and knows the bricklayer. He should be not only permitted but required to visit the plants at intervals and becoming at first hand familiar with its opportunity, in turn transmit to the production manager the valuable information useful to the business that he gathers day by day at work and which never gets into a letter.

Furthermore the production manager should visit the important markets to which his goods are consigned. Going to a car being unloaded he will know its usual condition on arrival and will perhaps receive a useful lesson as to necessity for greater care in packing and shipping.

Send him to buildings under way and in addition to observing his good qualities call especial friendly attention to chances for improvement of service. The general run of the men directly responsible for quality and service seldom see their wares after leaving the plant. The average salesman seldom sees the plant whose product he is boosting. Why not get them together on the ground to enthuse each other?

Now all of this means expense and many of us having small plants hesitate. Yet it is a reasonable item of cost and should be so considered. The object of it all is to give the ultimate consumer better service and wider range of selection and this cost logically should be reflected in the revenue.

We should never overlook nor lose sight of a desire in a single transaction either of us to give to the finished wall the best that is in us.

Are we properly preparing ourselves and our sales representatives with the data necessary to answer all questions impressively and promptly as to comparative costs not in the pile but in the wall against any and all substitutes?

The division or group meetings, because of their frequency, would appear to present the best opportunity to work out plans and to keep plans working and I appeal to the membership to permit nothing short of serious matters to prevent their regular attendance at division meetings.

Let us keep constantly in mind what Rotary has taught us:
"He profits most who serves best."

Secretary-Treasurer R. D. T. Hollowell made two separate reports, one general report of associational activities and the other the financial report. The latter, audited by Ernest and Ernest, auditors of the association affairs, showed a very satisfactory financial status.

The general report was as follows:

(Continued on page 507.)

THE Face Brick Dealers' Association of America had a fine representative turnout and their sessions were all on the snappy live wire order characteristic of the salesmen element. The first session, which was held December 1, consisted largely of roll-call and routine business, which included the President's address, Secretary and Treasurer's report, appointment of committees and an address on association benefits by B. Mifflin Hood, of Atlanta.

President J. H. Donohue declared that the adoption of a new policy, embracing up-to-date cost accounting methods, uniform code of trade ethics and local credit bureaus throughout the retail field, have prevented all profiteering and unjust practices toward the public.

B. Mifflin Hood, of Atlanta, speaking on the state of the trade organization, said that no charge of unfair prices could be laid at the door of the face brick industry, and that every incentive is being used to stabilize the market at the lowest reasonable margins for the benefit of the building public.

Officers' reports showed an increase in membership.

Thursday morning the dealers attended the joint session of the two associations, held in the Assembly Hall. (See Joint Session.)

Dealers' Second Session.

The second session of the Dealers' Association was called at 2:30 p. m. December 2. The meeting was called to order by President J. H. Donohue, who said he was called upon to appear at the manufacturers' meeting, and introduced Vice-President R. L. Findlay to preside over the session.

The first number on the program was an address by Dr. G. C. Mars, on "The Dealer's Relation to the Face Brick Advertising." Dr. Mars spent some of his time in reviewing the talks on business conditions which had been made at the other sessions, and supplemented them with some views of his own as to why the buying public has been boycotting business. He likened the buying public to the goose which lays the golden egg, and said there has been disturbances around her nest until she became agitated and was circling around in an uncertain manner, waiting till things quieted down to get back on the nest and resume laying. He reviewed at some length the ups and downs of prices during and since the war, and the reasons therefor. Then he took up the subject of advertising, what they are undertaking to do, and how the dealers may co-operate with him in the work of exploiting face brick. He says they figure on getting into ten million to eleven million homes with the story of brick, and thus reaching perhaps thirty million readers. Here, he argued, they perform the opening work of salesmanship by getting in where the personal salesman does not go till after the prospect is favorably impressed and makes further inquiry.

He said they had distributed by request thirty-eight thousand copies of the booklet on the story of brick, and he read a number of brief favorable comments which had come in voluntarily from those receiving it. Also, he outlined how this in turn led to requests for the book of brick homes, which they had distributed by thousands and thousands.

Then he told the dealers that in this printed literature the industry had set up a standard for face brick service that created an ideal which the industry itself must live up to and help fulfill.

He called attention to a third book being issued, more on the technical order, with detailed description of types of walls, different methods of bonding, etc., and this he considered a book that every salesman should carry along with him. Also they have pamphlets to send out to prospects, and they are getting up some sketches of cottage and bungalow type of homes ranging up from seven to eight rooms which will be ready for distribution in the spring.

Dr. Mars said that one of the evident needs is a service somewhat similar to what the lumbermen have been furnishing for small towns and country points in territories not covered personally by salesmen posted on technology and details of brick home building.

Another bit of work he called attention to is some folios they are getting up for architects containing specifications on mortars, bonds and a series of details from the best types of architectural work in the country.

In winding up Dr. Mars made a plea for co-operation between the dealers and manufacturers, and asked that the dealers take it upon themselves to furnish him with photos of good work done in their community, both of buildings as a whole and of details, especially such details as doorways.

Dr. Mars was promised co-operation and was given a rising vote of thanks by the dealers at the end of his talk.

J. W. Wheeler, of Wheeler & Howes, Bridgeport, Conn., under the subject of "Our Obligation to the Customer," discussed policies of distribution in New England which he said seemed to be different from other parts of the country. They make their distribution in the main through local retail dealers in masons and builders' supplies, whereas in many other parts of the country he finds that the brick dealer or distributor does his business direct with the individual customers. He said he thought the hollow tile manufacturers had defined more clearly the matter of distribution by going on what they term a hundred per cent dealers' basis and making distribution through their agencies and the retail dealers in building material.

Burt Wheeler, of Kimbell-Wheeler Brick Company, Chicago, led the discussion on "Our Obligation to the Manufacturers" by setting forth three leading points. First, buy the manufacturers' goods; second, pay bills to the manufacturers; third, follow up the advertising campaign and co-operate with them in boosting face brick.

There developed out of this subject some interesting discussion of the question of the dealer carrying conflicting or competitive lines which some favored and some objected to.

Then came one of the finest displays of the spirit of cooperation ever encountered in an association meeting. This came on the question of passing the buck to manufacturers when prices were high or when stock shipped is not just what it should be. The dealers, one and all, seemed to agree that there should be no buck passing, that when customers complained of high prices they should seek to explain them, and when, through error, a shipment was refused, or some trouble arises, the dealer should seek to make the best possible disposition of the matter, and not simply step out from under himself and leave the manufacturers with the bag to hold. In a word, the argument was that a dealer should consider himself interested in the success and welfare of the manufacturer, and they are partners in a way in business and must help each other.

To this end it was urged that dealers should visit the plants frequently, not only to keep informed on what is doing, but also that they may look over and assist in disposing of any irregular stock which may have accumulated on manufacturers' hands.

The subject of "The Manufacturers' Obligation to Us" was handled by Mr. Don Wever, of The Brick Sales Company, Cincinnati, who said that he thought the manufacturers should visit around with the dealers as well as the dealers visit with the manufacturers. His point was that the manufacturer by visiting and seeing the work after it is put up will come to a better understanding of how it is used and how it shows up in use. Next to this he argued that samples sent out by manufacturers should be representative of stock produced regularly and not some specially selected samples which might mislead the customers in expecting better things than are forthcoming. Another point made in this connection was that manufacturers should seek to standardize specified shades so that they will mean the same thing year after year and in different parts of the country.

He also bespoke efforts to get business on a more stable basis, so that quotations could be made good for definite periods and not subject to change without notice.

Dealers Elect Officers.

The third session of the Face Brick Dealers was brief and was given over in the main to reports of committees and the election and installation of officers. There were some brief talks by John M. Stone, B. Mifflin Hood, T. E. Wilson and others on a spirit of co-operation among themselves and with the manufacturers.

Secretary Randall, of the N. B. M. A., extended an invitation to the dealers to attend the big gathering of the clans in New York the first week in February.

The election of officers and directors resulted as follows:

Officers.

President, R. L. Findlay, of the Hay-Walker Brick Company, New York City.

Vice-President, Burt Wheeler, Kimbell-Wheeler Brick Company, Chicago.

Secretary, Morris W. Montgomery, Chicago.

Directors.

Chas. F. Harrison, Gaddis-Harrison Brick Company, Columbus.

Fred La Fountain, Kansas City.

John Donahue, St. Paul, Minn., Corning-Donohue Brick Co.

R. N. LaBar, LaBar-Williams Co., Scranton, Pa.

W. N. Fry, Fisher Lime and Cement Co., Memphis, Tenn.

FRENCH LICK PERSONAL NOTES.

B. Mifflin Hood, of Atlanta, Ga., in giving a review of business conditions and the business outlook in the south, expressed confidence in the future of the clay-working industry and building operations. Incidentally his sales force displayed at the hotel was an interesting showing of samples of their products.

V. H. Kriegshaber, Kriegshaber & Son, Atlanta, tells an interesting story of his father's pilgrimage from the old country back in '49 and up the Mississippi and Ohio rivers to locate in Louisville, where V. H. was born.

We missed Tom Green, of the Tom Green Brick Co. of

Sioux City, Ia., but George Sterling was there to represent him.

Col. R. B. Tyler, of Louisville, went up a day ahead and stayed over a few days to make a week of it, for rest and recreation.

The new President of the Dealers' Association, R. L. Findlay, of the Hay-Walker Brick Co., New York, has something up his sleeve for the boys when they come to the N. B. M. A. gathering the first of February, and from what these live wire dealers have been doing in the past it is sure to be something interesting.

O. G. Knoske came near showing up with a hundred pounds of weight at the convention, tipping the scales at 99, which is a record for him. He has his full size in the business world, however, and the Atwood-Knoske Sales Co., of Akron, Ohio, has made a good record. He says at present, however, Akron is suffering from a reaction in the rubber and automotive industries.

Charles Hermann, of the U. S. Brick and Tile Co., Tell City, Ind., is still the youngest man of the gathering, and enjoyed every day of the meeting to its full measure.

F. Graham Williams, Atlanta, Ga., says business was splendid the first part of the year in Atlanta, but lately there has been a holding up of loans on building operations which has temporarily put a check on business. He thinks that the only thing necessary to stimulate the return of active building is easier money for building purposes.

W. A. Kurman, of Harding & Company, Indianapolis, Ind., says he thinks the prospect for the brick business in Indianapolis next year fairly good.

R. Combs, of the Moulding Brick Co., Chicago, refuses to claim relationship to all the Combs of the country.

Homer Wiseman, of the West Virginia Brick Co., Charleston, W. Va., reports that they have a splendid run of business in fire brick these days and they hope for a pickup in the demand for face brick in the spring. The report of busy times in fire brick when this business is severely curtailed makes cheerful news.

A. B. Lyon, of the Hydraulic-Press Brick Co., Dubois, Pa., didn't substitute for Elisha Kane, but he is near enough his double that he was mistaken for him several times at the convention.

The work of J. H. Donohue, of the Corning-Donohue Brick Co., St. Paul, Minn., as President of the Dealers' Association, was so good that he was tendered a rising vote of thanks on relinquishing his post.

Frank Butterworth, of Danville, Ill., says that while there is no active business in brick at the present time the funda-

Prominent Delegates Attending Brick Manufacturers' and Dealers' Convention

One of French Licks Famous Springs Housed by Fine Burned Clay Pagoda.

Reading from Left to Right.—Thomas E. Wilson, Pittsburgh, Pa.; John M. Stoner, Cincinnati, Ohio; G. B. Luckett, Crawfordsville, Ind.; J. H. Donohue, St. Paul, Minn.; B. Mifflin Hood, Atlanta, Ga.; M. W. Montgomery, Chicago, Ill.; B. W. Ballou, Kansas City, Mo.; Theodore A. Randall, Indianapolis, and P. B. Belden, Canton, Ohio.

mental conditions are good and there should be an early revival that will continue uninterrupted for some time. It is merely a question of how soon.

H. D. Conkey & Company, Mendota, Ill., opened up a box of pocket rules, with an invitation to everybody to take one.

The Sibleys, "Massa John" and daughter Hettie, stopped over on their return trip at Louisville for a day to attend to some business and to take in that spectacular show "Aphrodite."

If "Jack" Peabody ever feels called upon to foresake the coal business he can make a living as an entertainer if he will keep in action the talent displayed before the brick gathering.

Expressions heard from individual members of the face brick fraternity indicate an insistent desire to see a goodly share of their investment in the association dues going to assist in the advertising campaign being conducted by Dr. Mars for the face brick manufacturers.

J. W. Wheeler, of Wheeler & Howes, Bridgeport, Conn., was somewhat impressed with the fact that conditions between manufacturers, distributors and retail dealers in brick are different in New England from other sections of the country. As a matter of fact, the conditions which Mr. Wheeler outlined as existing there of the brick agent or distributor making distribution through retail dealers is the logical one for a proper local hookup, and the chances are that in time other sections of the country will follow the example of his section in completing its machinery for local distribution.

Burt Wheeler, of the Kimbell-Wheeler Brick Co., Chicago, raised an interesting question of the extent to which brick stock should be carried on hand by dealers to better serve the needs of the community in the matter of quick action and filling small orders. It seems tnat the Chicago practice is to carry considerably larger quantities in stock than prevails in many other centers, and it raises an interesting question if other centers may not profit from a heavier stocking, partly as a safeguard against car shortage as well as for the convenience of serving the local needs more promptly.

Wm. E. Whaley, of Louisville, was one of the new members of the dealers' fraternity in business for himself, and he took Mrs. Whaley along to see just the kind of business men with whom he is now affiliated.

J. M. Stoner, of the Cincinnati Builders' Supply Co., is a firm believer in keeping right up to date and keeping everybody in close touch all the time. He argues strongly in favor of having a meeting of the local salesmen once a week for the exchange of ideas and information and to keep things alive.

H. T. Miles, of the Spahr Brick Co., Maysville, Ky., received a telegram while at the French Lick meeting from the plant, stating that they had burned a kiln in four days and twenty-two hours. It used to take them from 12 to 14 days, and the improved showing is the result of a producer gas system which they had recently installed and are trying out. This, he says, not only saves the amount of time indicated but the consumption of coal per day is only about half what they formerly burned in the kilns.

The registration of the face brick manufacturers shows twenty-eight states represented. Ohio had 71, Illinois 40, Indiana 32, Pennsylvania 25, Minnesota 17, New York 16, Michigan 12, Missouri 11, Kentucky 8, Iowa and Nebraska 7 each, Tennessee, Georgia and Massachusetts 6 each, Texas 5, Wisconsin 3, Oklahoma, Washington, D. C., New Jersey and Connecticut 2 each, while single representatives were present from Kansas, Louisiana, Arkansas, Virginia, North Carolina, West Virginia, Alabama and South Dakota. Canada had a delegation of seven.

The Hydraulic Press Brick Co., of St. Louis, Mo., had the largest delegation. Nineteen of their live wires were present. Hocking Valley, Fiske & Co., Western Brick Co., Twin City Brick Co., B. Mifflin Hood Co. and Hay-Walker Co. were represented by four men each, while the Claycraft Mining & Mfg. Co., Gaddis-Harrison, Acme Brick Co., the Briggs Co. Brick Sales Co. and the Beaver Clay Mfg. Co. had three representatives each.

Douglas F. Stevens, of the Acme Brick Co., Danville, Ill., says that at present the demand for brick is slow and uncertain, but he takes a hopeful view of the future outlook and expects to be prepared to meet the demand when it does come.

Among the regulars in attendance were H. C. Kleymeyer and John Andres, of the Standard Brick Manufacturing Co., of Evansville, Ind. They report that they have slowed down operations, but expect to manufacture and keep enough stock on hand to be well prepared for the spring demand.

RYTT'S DISPLAY OF ROUGH TEXTURE BRICK.

Irving A. Ryttenberg, of the Sumter (S. C.) Brick Works, furnishes a striking example of some of the new-comers making the old heads sit up and take notice. A year ago he brought half a dozen brick as a present for John Sibley, which, because of their striking variety in color, attracted the attention of brick men and dealers, and out of this he developed some important dealer connections which created a keen interest and a wide distribution of his Dixie texture brick. This time he shipped up enough brick to lay up a sample wall corner out in front of the hotel entrance, and this display was one of the striking features of the meeting. The writer encountered the Lucktenberg brothers, of the Burton-Townsend Co., making an admiring study of it at close range, and asked them to name the different touches of color as they came to mind from looking at the samples laid up. Among the colors named were yellow, red, black, pink, purple, drab, brown, gray, blue and buff. After commenting upon the play of colors and reviewing some incidents of sales and demands from foreign countries the Lecktenberg boys moved to rechristen Ryttenburg's brick as "the brick of all nations," instead of simply Dixie texture. As a result of coming to these meetings and getting some ideas of color and texture features which appeal to architects, and getting acquainted with dealers, a brick that was formerly practically unknown and of uncertain value has won wide recognition, good agency connections and favorable comments from

Display of Dixie Texture Brick, Being Admired by Albert D. Klein, of Omaha (left), and I. A. Rittenberg, Sumter, S. C.

architects of high standing who are ordinarily rather stingy about making testimonial comments. Quite a lot of credit is due to Ryttenberg's personality and aggressive methods, but back of it there is an unusual and remarkable clay product in the form of a brick of many colors having the peculiarity of light weight and of not shrinking in the process of burning.

REVIEW OF A. F. B. A. MEETING.

(Continued from page 503.)

General Report of Secretary.

Mr. President and Members of the American Face Brick Association:

The Secretary's report to the membership can be nothing more than a recapitulation of a year's effort. Since our last annual meeting, held here just one year ago, our organization has successfully met some serious difficulties, has continued to hold its steady forward pace and has made some gratifying gains.

The objectives of this Association have been, with business-like foresight, definitely set forth by our Board of Directors. Allow me to comment on each one:

A. EXTENSION AND RETENTION OF MEMBERSHIP. Since our last annual meeting, ten new members with estimated normal total annual face brick deliveries of 50,000,000 have been added to our membership—an increase of 10%. Our present membership numbers 106 and as it steadily grows, it extends its influence into new territories. The force of this statement can be realized by the assertion that applications from three California face brick manufacturers are now being acted upon. When these factories become members, this Association, for the first time, will be a truly national association in the sense that practically every face brick producing section of the country will be represented in its membership. A number of plants in various sections are about ready to make application and it can be anticipated our program on this objective will be as good or perhaps better in 1921 than in 1920.

B. DISTRIBUTION OF MARKET REPORTS. During the year, the Association has seen fit, owing to broad general conditions, to discontinue the collection and distribution of statistics having relation to price. Our collection of information on production, stocks, unfilled orders, etc., has been developed during the past year to the highest point which has ever been attained by us. Various extensions and refinements with which all are familiar have been made in this particular work. There is room for much improvement and our members may anticipate still further gratifying extensions in the future.

C. STIMULATION OF ALL WORK OF THE DIVISIONS. This objective is one of the most important we have as it is recognized that continued progress by The American Face Brick Association depends largely upon the extension of education and the maintenance of enthusiasm within the divisions. Each division meeting involves a large amount of detailed study and clerical work both before and after. No effort has been spared to make successes of our division meetings and the Secretary feels that the majority of our members realize that every possible opportunity and suggestion to make our programs interesting and still be entirely consistent with every State and National law, has been taken advantage of. Some of the work embraced by this objective during the last year includes the organization of the Southwest Division; stimulation of attendance at division meetings by co-operation with chairmen in sending out their letters, by tracing all meetings by notices direct, by personal calls upon and correspondence with non-members urging them to attend division conferences without obligation, personal calls on and correspondence with members who have become lax in attendance; the compilation of attractive programs which included the giving out of timely and authoritative information, the exercise of great care in compiling adequate minutes of meetings and prompt distribution of same, the encouragement by every possible way of the policy of cost discussions, etc., etc.

D. THE SECURING OF AN ADJUSTMENT AND REDUCTION OF FREIGHT RATES. The conduct of this objective was entrusted by our membership to the Traffic Committee, which is composed of Mr. H. E. Stringer, chairman, Mr. P. C. Hodges and Mr. G. B. Luckett. Chairman Mr. Stringer will later present to you a concise report by his committee covering its activities since the last annual meeting. In this connection it should be stated that the facilities of the Secretary's office were placed at the disposal of the Traffic Committee and we believe we have been able to be of assistance in this important work. The Secretary is personally aware of the large amount of work which our Traffic Committee has put upon this undertaking and feels that the membership should duly appreciate such intelligent and faithful efforts.

E. UNIVERSAL ADOPTION OF UNIFORM COST ACCOUNTING SYSTEM BY UNITS OF THE INDUSTRY. The necessity for making onerous detailed tax returns has been an ally, although an unwelcome one, in our efforts to extend this objective. We can look back upon the year 1920 as the period in which the greatest progress has ever been made in the face brick industry on the subject of cost finding. A number of installations of the Association's endorsed cost finding plan have been made and an even larger number of factories have had existing systems reconciled with the fundamental subdivisions of the endorsed plan. Four of our divisions are regularly discussing costs at each meeting, using for that purpose a form initiated by a meeting of division chairmen and endorsed by the Board of Directors. As this work progresses, the absolute necessity for a thorough knowledge of costs is being impressed upon all. There also seems to be a growing realization that the loosely conducted business is a thing of the past and in order to survive, all business men must get down to the foundation rock of efficiency and service. Efficiency can hardly begin without a comprehensive knowledge of costs. We must here acknowledge our indebtedness to the co-operation which has been extended to us in this work by Ernst and Ernst.

F. STIMULATION OF DEMAND BY CAREFULLY THOUGHT OUT AND EFFICIENTLY EXECUTED PROMOTION CAMPAIGN. Our Director of Advertising, Dr. Mars, will appear upon a later program and will deal comprehensively with the work of his department. The Secretarial Department has enjoyed the warmest co-operation from the Service Department and in turn the Secretarial Department has made special effort to keep our members posted, through the division meetings, with the latest activities and facilities of the Service Department. Dr. Mars can best advise the membership as to the effect of our promotion work upon the building public. However, the Secretarial Department has the opportunity to be in somewhat closer touch with our members and it feels that one of the most important results of our program in this work has been the creation of a new respect for his business and industry by the face brick manufacturer, and a recognition by manufacturers that they must maintain high ideals both in the quality of their ware and service.

In addition to the above objectives, the Secretary's office has striven to communicate quickly to the membership all information appearing to be of general interest. Also it has initiated two regular bulletins—the Salvage Bulletin and Corporation Reports and Taxes Bulletin, which are being issued at regular intervals for the benefit of all members.

The Secretary feels that fundamentally this Association is stronger and more solid today than at any period in its previous history, that its members more clearly understand the relation between success in their own businesses and success for each one of the Association's objectives. This understanding has been largely brought about by personal contact at meetings and the membership can better understand the huge activities of this organization when it is explained that within the last year, sixty-one formal meetings have been planned and carried through under the auspices of this Association. Of these meetings, fifty have been division meetings, four sales conferences, two Executive Committee meetings, three meetings of the Board of Directors, and two membership meetings (including this one). In successfully carrying out this large program, I wish to acknowledge my obligation to a small but intelligent and energetic corps of assistants.

The Secretary wishes to acknowledge with appreciation the assistance and friendly counsel which has been freely and generously extended during this year by our President, Mr. John H. Black. Mr. Black reluctantly assumed the obligations of such an important post, but having accepted, he has spared no effort to deliver this organization over to his successor in even better shape than he received it. Mr. Black is personally responsible for the initiation of new ideas in our work, the effects of which are bound to have lasting influence in the continued elevation of our ideals. The Secretary personally feels it to have been a great privilege to have had the opportunity to be closely associated with so wise and forceful a personality.

H. E. Stringer, chairman, read a report of the Traffic Committee. This showed the work incident thereto and the progress of the largest petition against increased freight rates on clay products ever presented to the Inter-State Commerce Commission.

REPORT OF A. F. B. A. TRAFFIC COMMITTEE.

Gentlemen of the Convention:—

The Traffic Committee of the American Face Brick Association beg to present the following general report:

A year ago at French Lick the attorneys in the Brick Rate Case, through Mr. Gallagher, presented to you a very comprehensive statement of the developments up to that time, and the plans for the future.

Since then the case has been heard by the Interstate Commerce Commission, hearings being at Washington from July 7th to July 17th, and at Chicago from July 26th to August 3rd, 1920, inclusive.

The principal witnesses for the brick and tile interests were—Mr. Leo Feit, a rate expert formerly connected with the Wheeling & Lake Erie Railroad, and Mr. George W. Oliver, a railroad statistician, formerly connected with the Atchison, Topeka & Santa Fe Railroad. Both of these men were thoroughly competent in their respective lines. Mr. Feit had much to do with the preparation of the 1911 adjustment in C. F. A. territory; Mr. Oliver in his work as statistician of the Santa Fe prepared the railroad's cases before the Commission. He is one of the foremost of the railway statisticians.

Mr. Oliver presented a compilation of statistics of the brick and clay building tile industry from the transportation standpoint. The data relating to shipments and revenue covered some 87,000 cars for the year 1916, loading nearly 3,000,000 tons, paying a revenue of over three and one-half millions of dollars. The revenue from the 1916 shipments figured on the 1919 rates would be $5,123,000, and figured on the present rates would be approximately $7,000,000. Statistics from June 25, 1918, to April 30, 1919 (poor months), showed 34,000 cars, or 1,250,000 tons, with a revnue of $2,225,000. Our main competition is from lighter materials, and a percentage increase is not so burdensome to them. Mr. Oliver also showed traffic statistics of all class one railroads in the country, and indicated full revenue details. His figures showed that in the eastern district the revenue from brick was approximately 25% higher than the revenue from "all freight," and in the western district the revenue from brick was approximately 10% higher than the revenue from "all freight." From the southern territory the replies to the questionnaire had not been sufficiently large to permit full compilation, particularly in view of the fact that in the questionnaires actually returned there was too great a preponderance of long-haul shipments.

Mr. Oliver prepared several scales. Same were distance scales in form and not mileage scales, same were intended to reflect only the then present brick and clay building tile structure. The object of these scales, therefore, was solely for use as a test.

It is, of course, not possible to adequately cover the comprehensive statistical data and evidence presented by Mr. Oliver. It can be truthfully said that the carriers made but little pretense of combating this data, and evidence, and therefore their efforts in this connection were hardly successful.

Mr. Feit, covering the structure of rates, presented in the neighborhood of 100 maps and exhibits, showing in detail the existing rates and relationships, inequalities, discriminations, etc., in all sections of the country. Considerable attention was naturally paid to C. F. A. and trunk line territories because of the fact that since 1911 there has been a brick rate structure well determined in that territory, and some similar adjustment should be made in other territories where large quantities of brick and tile are produced and consumed.

A number of other witnesses were presented on behalf of the complainants and subsequently the carriers made their defense. It would be out of place to make public comment in reference to the carriers' defense. We can truthfully say, however, that we were at least surprised at the defense submitted, and we do not believe that the carriers in any material way weakened the case which we presented, in fact, many of their witnesses supported a number of contentions made by us, showing the absolute need of an adjustment of brick rates and classification.

In all 3,000 pages of testimony were taken, exclusive of the great number of exhibits introduced by both sides. An abstract of this evidence, consisting of some 550 pages in book form has been prepared and presented to the Commission. Members of the Association will shortly receive copies of this abstract of evidence; they can then study the case at leisure in detail which it is not possible for us to cover in this general annual report.

On November 24th the attorneys presented our briefs to the Commission, copies of these briefs will later be sent you. The attorneys and the members of the Joint Traffic Committee collaborated in the preparations of these briefs and in same we have endeavored to present the salient points brought out in the hearings.

The next important step will be the preliminary report of the Examiner who heard the case for the Commission. When that report is made we may feel it incumbent to file a supplemental brief if all the findings do not meet with our approval. After that time the full Commission, or a designated section of same will hear oral arguments by the various attorneys. After that nothing further is to be done pending the decision of the Commission in the case.

As to the results of that decision it is not humanly possible for any one to foretell. Unquestionably the decision of the Commission will at least determine the proper structure of brick rates and a proper level of brick rates, certainly in so far as key rates are concerned. It should also establish a common classification for rate purposes. No decision of the Commission can or will rectify all existing inequalities but it will make it possible to more readily iron out such inequalities where they exist, and for the first time in the history of brick rates we will have some proper basis on which to proceed.

Now as to the future: Your present Traffic Committee has, under the authority given it by the Association and the Board of Directors, been working for two years. We are, in one sense, at present in midstream. This Traffic Committee or some similar committee should be continued at least for another year while the decision of the Commission is rendered. Much study will have to be given to same and it may further be necessary to take some minor steps at least to bring out full readjustment. Your Committee would suggest the continuance of the present committee with the addition of two more members, making a membership of five in all, one of the new members to be from the territory west of the Mississippi, and the other member to be from the South or Southwest.

We would further recommend that the Committee have continuing authority to co-operate with similar traffic committees from the Paving Brick Association and the Hollow Tile Association.

There has been but little criticism of the work of the Committee for the past two years. Some criticism, of course, was natural. The Committee has endeavored to work conscientiously and we believe the final results will show that in the main our efforts will be successful in the establishment of a proper rate structure on brick and a proper level of rates. There are, of course, manufacturers who have felt in the past that the subject of rates was an individual problem, and was to be handled individually. Your Committee is of the opinion that this is hardly the proper plan, in view of the present day situation, and the probable situation in the future.

Never again will it be possible for producers to obtain preferred rates at the expense of logical competitors in the same district. Furthermore, freight rates representing on the whole from one-fourth to one-third of the delivered price of our product, is too important a factor to be considered, except in the fullest sense. For too many years our industry has lagged in the consideration of this important subject. The foundation has now been laid for a proper study of the problem readily and thoroughly at all times in the future, and the effort thus far expended and the results obtained and to be obtained, should not be lost. The brick industry wants to pay and should pay its just proportion of the transportation cost. It should not, however, pay anything more than its just proportion.

Due to the general stoppage of all new construction in the country for the past three months there may be still some producers who do not appreciate the great importance of the subject of brick rates to their very existence. When business opens again, however, in the spring, all producers are going to more thoroughly realize what the effect of the order of the Commission in Ex Parte No. 74 has been. It will be found that the percentage increase, amounting in C. F. A. and Trunk Line to 40%, and 33% and 25% elsewhere, has localized the clay industry to a great extent.

Consideration must be given to the fact that while a certain amount of such localizing is probably proper and necessary, it can be carried too far. The industry as a whole must prosper, if producers as individuals are to prosper. Let us not forget that one potent fact. You are spending vast sums as a unit for advertising so as to increase the business of the industry as a whole. Let us, therefore, give at least some part of our effort and resources for the proper protection of the industry on the all-important problem of freight rates. You have already probably noticed recently through the press of the country propaganda which is being started for a still further increase in freight rates on the theory that the present heavy advances do not bring in quite sufficient revenue to pay 5½% or 6% on the investment. This propaganda is only starting, but it was a similar propaganda from a small beginning that finally resulted in the heavy advances under Ex Parte No. 74.

The Traffic Committee from its study of the problem is convinced that the producers of clay products are now standing with their backs to the wall. We feel that much has been gained and more will be gained shortly in the decision of the Commission, and we must earnestly recommend that the producers at all times in the future take all necessary steps as a unit to protect themselves in the all important subject of freight rates.

The vote upon the proposed changes in the constitution resulted in the unanimous decision to enlarge the membership of the Board of Directors from 18 to 21, including three officers, namely, the president and the vice-presidents.

The vote upon the standard size of smooth face brick resulted in the change from "approximately 8 by 2¼ by 3¾" to "approximately 8 by 2 by 3⅞," this to apply to smooth face brick only, said change being due to certain requirements of eastern architects in regard to mortar joints of smooth face brick.

The rough brick standard remains the same as formerly, "approximately 8 by 2¼ by 3¾."

The principal address of the first session was that of Mr. W. E. Worth, assistant manager Industrial Relations International Harvester Company, Chicago.

He detailed the work and general scheme which had established a satisfactory relationship between employer and employee in their twenty-two plants. By the right understanding and closer co-operation between the employer and employee his company has created through its unique rules and regulations, better working conditions, better production, more satisfaction generally and has eliminated for most part all radical or Bolsheviki tendencies, there being no strikes or disturbances, the plants being run on practically the open shop principle.

A rising vote of thanks for this splendid address was tendered Mr. Worth, after which the convention adjourned for the day.

The evening was given over to meeting of Division Chairmen and Vice-Chairmen, hunting the badger and a trip to Brown's, where very few, if any, lost their voices yelling "keno," but many departed wishing that that was all they had lost.

Wednesday morning a joint session of the Manufacturers and Dealers' Associations was held—see joint session report. Immediately after the joint session the face brick manufacturers resumed their business session with election of officers and board of directors, which resulted as follows:

President, Paul B. Belden, Belden Brick Co., Canton, Ohio; First Vice-President, B. W. Ballou, Kansas, Buff Brick and Mfg. Co., Buffville, Kans.; Second Vice-President, B. Mifflin Hood, Atlanta, Ga.

NEW BOARD OF DIRECTORS OF A. F. B. A.

B. W. Ballou, Kansas Buff Brick & Mfg. Co., Kansas City, Mo.
George A. Bass, Hydraulic-Press Brick Co., St. Louis, Mo.
H. R. Beegle, Beaver Clay Mfg. Co., New Galilee, Pa.
P. B. Belden, Belden Brick Co., Canton, Ohio.
W. R. Bennett, Acme Brick Co., Fort Worth, Texas.
J. H. Black, Jewettville Clay Products Co., Buffalo, N. Y.
J. W. Bogue, V. V. V. Brick & Tile Co., Neodesha, Kansas.
F. W. Butterworth, Western Brick Co., Danville, Ill.
T. P. Cuthbert, Fallston Fire Clay Co., Pittsburgh, Pa.
W. H. Hoagland, Claycraft Mining & Brick Co., Columbus, Ohio.
B. Mifflin Hood, Legg Brick Co., Atlanta, Ga.
G. B. Luckett, Crawfordsville Shale Brick Co., Crawfordsville, Ind.
S. C. Martin, Kittanning Brick & Fire Clay Co., Pittsburgh, Pa.
H. R. Mears, Bloomsburg Brick Co., Bloomsburg, Pa.
T. C. Moulding, Southern Fire Brick & Clay Co., Chicago.
Eben Rodgers, Alton Brick Co., Alton, Ill.
C. C. Stratton, Alumina Shale Brick Co., Bradford, Pa.
W. Siwart Smit, Twin City Brick Co., St. Paul, Minn.

Divisional Meetings.

Thursday morning was given over to divisional meetings. The joint meeting of the Indiana-Illinois Division, Ohio Red Brick Division and Northwestern was addressed by Fred Solms, President of the Colonial Brick Company, Detroit, Mich. The meeting of the Buff, Gray and Flashed Brick Divisions was addressed by Mr. J. H. Donohue, Jr., of the Corning-Donohue Brick Company, St. Paul, Minn. The joint meeting of the Southern Division, the Kansas-Oklahoma and Southwestern sections was addressed by Mr. John W. Sibley, of the Birmingham Clay Products Company, Birmingham, Ala.

These three excellent addresses were on marketing and distributing, tending toward the development of a higher ideal of service. This topic was discussed informally following the set speeches by first-class salesmen, who made critical observations on general conditions.

The meeting of the Board of Directors occurred Thursday evening and the final session was held Friday morning.

Louis Grilk, of the George L. Dyer Co., Chicago, made a short talk on the subject, "The Statistics of Advertising." He pointed out that the volume of business of southern pine could not keep up the standard for more than ten years, for the timbered lands were fast being depleted, and after a ten-year period lumber would have to be shipped from the far-off states. Then freight rates would make lumber almost prohibitive. The employment of lumber depletes our resources in that particular field, while the use of clay products does not, for the supply of the raw material is far beyond all possible needs for centuries, and an increased permanent value is given to the material used. Lumber, on the other hand, deteriorates, and sooner or later is a total loss. Therefore clay product industry is a splendid instrument in protecting our natural resources, and will have a greater and greater place in the upbuilding of the country as the southern pines dwindle and freight rates make it too costly.

He reviewed freely the campaign for publicity up to date, stated that the public had obtained a decidedly favorable impression, for there was order, not confusion, in the advertising. He expressed the belief that the booklet issued by the Association, "The Story of Brick," is the finest piece of commercial literature ever issued in this country, and this was aside from its real literary value. He stated that there never was as much jazz in advertising in other lines as there is today; it is clever, but not of the substantial, get result type, as that of the face brick people.

He stated that the face brick advertising had appeared in twenty-six different high grade magazines, representing a total circulation of nearly fourteen million. Thirty-six thousand inquiries had been received for the Home of Brick, at an average cost of $2.92 an inquiry. Before the war $2.50 was considered an unusually low figure; this was before everything entering into the game had increased, so that the present cost was gratifying, but still he expected a lower average in the near future.

The advertising in 1921 will appear in seventeen different magazines instead of twenty-six, with a circulation of 10,500,000 instead of 14,000,000. He prophesied that for dollar spent in 1921 campaign will be more productive even than in 1920.

Mr. Rorick, of The National Builder, made a short talk on the relation of the bricklayer to the brick manufacturer, and gave the results of his company's questionnaire mailed to various unions and builders' exchanges, investigating the charges that bricklayers were restricted by their unions in apprentices and in the number of brick laid per day. This showed that the rumors were false, that the bricklayers were working in good faith with the contractors, and that the average brick laid per day is approximately 1,300 brick or 300 feet of tile. This information was secured, not only through the questionnaire, but also through attendance at eight state conferences of bricklayers.

He stated that troubles on both sides between bricklayers and brick manufacturers was about fifty-fifty, that the bricklayer was an important cog in the business, that the manufacturer's work was not done until the brick was in the wall, and that therefore there was urgent need of better co-operation. He suggested that a committee of six be selected from the three brick organizations to work with the Bricklayers' Union at Indianapolis, and an earnest endeavor be made to correct difficulties and to increase the number of bricklayers in this country.

G. C. Mars, director of advertising for the American Face Brick Association, made the principal address of the last session on the subject of "Standardizing Product and Stabilizing Business." He stated that he felt gratified that the bricklayers received no condemnation in the New York scandal, and seconded Mr. Rorick's recommendation.

He reviewed business conditions, brought out the fact that the recent depression was simply a state of mind, and gave for his reason that prices would not decline to any appreciable amount, and that business would improve slowly but surely; that the coal and steel strikes were settled orderly, transportation facilities had improved greatly, as well as efficiency in teaming, and a better day's work was being given for the day's wage. His optimism was based on his general knowledge of the business and the optimism of such clear thinking business men as Gary and Schwab. He reviewed the work of his department and outlined the program for the coming year. The talk was similar to the one he made before the Face Brick Dealers' Association.

The convention adjourned following Mr. Mars' address, and a most successful convention passed into history. The delegates returned home with a keener interest in associational work and with a fixed determination that the state of mind would be one of hopefulness, which would develop as the days go by into a real business boom. The concensus of opinion at the convention was that the real need of the time is the enlightenment of the prospective builder relative to the stable conditions of business and the absolute safety and benefit in investments in building enterprises.

THE JOINT SESSION.

THE JOINT MEETING between the American Face Brick Association and the Face Brick Dealers' Association of America was opened at 10 a. m. December 2, and was presided over by John H. Black, President of the American Face Brick Association.

The session was devoted largely to a review of business conditions, the building outlook and the financial situation.

Senator Calder, who was on the program for a talk on the building outlook, was unable to be present, but Secretary Hollowell read a lengthy telegram from him explaining his inability to attend, and conveying greetings to the meeting.

Brick men from different parts of the country were called upon for an expression of opinion as to the trade outlook and the building prospects. Reports from all parts of the country were almost the same, and to the effect that while the brick outlook ahead is fine, actual business doing at the present time is very little. Conditions which have put a check on business for the time being are mainly matters of finance and price readjustment. There has been a curtailing of loans and a disposition to limit loans for building purposes to a very low percentage of the value of the property. Lately, however, the lessened demand for money to finance industrial enterprises has made more money available for building loans and there is a noticeable easing up in this situation. Money people are now willing to loan to a larger percentage of total value of property, and there is more money becoming available for loans on building operations. All expressed the feeling that the demand for brick would come back and that business would be lively again, and it is merely a question of how soon. And this in turn is largely a matter of psychology or a state of mind.

Perhaps the most important feature being brought out was the scarcity of bricklayers now as compared to prewar days. It seems that the war produced many new carpenters, but no new bricklayers, and from various parts of the country reports indicate that the number of available bricklayers today is considerably less than the number in prewar days. Consequently one of the problems of the day is how we are to develop bricklayers to supply the needs of the future, when active building gets under way again.

The Coal Situation.

The surprise number on the program at the joint session was "Jack" (Stuyvesant) Peabody, of the Peabody Coal Company, Chicago, on fuel. Those who heard him will heartily agree that Peabody is an artist at entertaining as well as a man of ideas and knowledge on the coal industry. His naive manner and quaint sayings soon had the whole meeting in good humor and in a favorable attitude toward him. Typical of many "bits" he put across was this:

He said that his father was the founder and the builder of their coal business, but for a number of years he had been trying to manage his father's business, and he had felt perfectly competent to manage it just as long as he could reach his father by telephone.

The real idea that Mr. Peabody put over was just as full of sound business doctrine as his joshing was full of humor. That idea was contract buying of coal through long periods, say ten years, and a plea for favor in buying coal for the larger producing units. He explained that coal could be had almost anywhere and that coal mines could be opened with a nominal outlay of capital in many cases, but his argument was that the economic producing and handling of coal calls for a large investment and a heavy tonnage. According to his estimate the average well equipped mine of today involves an investment of a million and a half dollars, and should have a production capacity of 4,000 tons a day. Mining operations so equipped, he said, were in position to handle coal year in and year out more economically than the smaller openings, and his argument was that if necessary people should poll their buying orders so as to get quantity, then make contracts running through a long period of time on a cost plus basis, which he says will insure a steady and economical operation of mines and also safeguard the needs in the way of forthcoming supplies, and in the end insure the purchasers obtaining coal at a minimum price.

At the end of his talk Mr. Peabody was given a rising vote of thanks.

The Financial Side of the Industry.

The most impressive address of the session from a serious business standpoint was that made by James A. Davis, of Chicago, on finance. The talk of Mr. Davis was full of good facts and figures and also carried a message of good cheer, because he predicts an era of great prosperity ahead of us, and predicts that this country today is the most solvent of all nations of the world, either now or at any time in history. He said that our war cost thirty-two billion dollars, and that at the end of the war we still owed twenty-six and one-half billion dollars. Since that time, however, we have reduced it down to twenty-four billion, which is today only 4½ per cent of our national wealth. This, he said, was the best showing ever made by a nation at any time, and he felt from the showing made and conditions in the country that the present depression will break all records for quick recovery.

He said that the banking resources of today in this country total thirty-three billion dollars, that our banking system is sound and the expansion in loans and discounts that had led to calling a halt is merely an expansion in prices which must be liquidated. This, he thinks, is being done in the most orderly manner of any nation, and that money will be freer at a lower rate of interest just as soon as the banks feel that the period of deflation is well in hand.

Incidentally in giving advice to brick makers and clay workers Mr. Davis advanced some doctrines that have been preached persistently by The Clay-Worker, and that is, all must boost together for the industry as a whole rather than split up and strive to promote the welfare of one branch at the expense of the other. He said that conditions were peculiarly favorable for the progress of the clayworking industry, partly because of the qualities and permanence of the material itself, but largely because clayworkers produce wealth without depleting resources. In a word, they create wealth out of a material which has only a nominal value, and of which the supply is abundant for the needs of all ages. The lumber industry creates its product at the expense of depleting our forests, while the clayworking industry practically creates a valuable product out of material which is so plentiful that it has only a nominal value in itself. Thus he argues that it has only a nominal value in itself. Thus grow or produce wealth from the ground, and they thus add to the permanent wealth of the nation.

In closing his address Mr. Davis made a plea for home-owning and proprietorship. He said that greater safety of the country comes about when men own their homes and own a share in business, because then they have an interest to safeguard and take a safe and sane view of government and its relation to man and industry.

The address is given in full on page 513.

The meeting adjourned with a rising vote of thanks to Mr. Davis for his review of finances and the business outlook.

THOSE IN ATTENDANCE AT ANNUAL MEETING OF THE AMERICAN FACE BRICK ASSOCIATION AND THE FACE BRICK DEALERS' ASSOCIATION OF AMERICA, HELD AT FRENCH LICK SPRINGS HOTEL, FRENCH LICK, INDIANA, DECEMBER 1, 2 AND 3, 1920.

H. B. Schaal, Hocking Valley Fire Clay Co., Nelsonville, Ohio.
F. W. Butterworth, Western Brick Co., Danville, Ill.
George A. Bass, Hydraulic-Press Brick Co., St. Louis, Mo.
P. B. Belden, Belden Brick Co., Canton, Ohio.
H. H. Rosenberg, Brick and Clay Record, Chicago.
T. C. Moulding, Straitsville Impervious B. Co., New Straitsville, O.
John H. Donahue, Corning-Donahue Co., St. Paul, Minn.
Robert Taylor, Jr., Hocking Valley Products Co., Columbus, Ohio.
Wm. T. Mathews, Claycraft Mining & Brick Co., Columbus, Ohio.
E. C. Howard, Columbus Face & Fire Brick Co., Columbus, Ohio.
Geo. A. Bilque, Gloninger & Co., Pittsburgh, Pa.
M. W. Montgomery, Sec'y-Treas. The F. B. A. of A., Chicago.
F. N. Blanchard, Reliance Brick Co., Lincoln, Neb.
R. C. Mitchell, Reliance Brick Co., Omaha, Neb.
W. N. Fry, Fisher Lime & Cement Co., Memphis, Tenn.
W. R. Bennett, Acme Brick Co., Fort Worth, Texas.
John M. Stoner, Cincinnati Builders' Supply Co., Cincinnati, Ohio.
R. N. LaBarr, LaBarr-Williams Co., Scranton, Pa.
R. L. Findlay, Hay Walker Brick Co., New York City.
Leo A. Krueger, Cleveland Clay Products Co., Cleveland, Ohio.
T. B. Freeman, Hay Walker Brick Co., Pittsburgh, Pa.
H. W. Holmes, Colonial Brick Company, Detroit, Michigan.
Clinton E. VanNess, Wheeler & Howe Co., Bridgeport, Conn.
V. H. Kriegshauber, Atlanta, Ga.
H. H. Sloan, Paterson, N. J.
A. E. Davis, Western Brick Co., Indianapolis, Ind.
J. N. Wheeler, Wheeler & Howe Co., Bridgeport, Conn.
C. A. Gardner, American Enamel Brick & Tile Co., New York City.
J. J. Fish, Fish Brick Sales Company, New York City.
F. T. Owens, Fiske & Co., Inc., Watsontown, Pa.
R. R. Dawson, Fiske & Co., Inc., Watsontown, Pa.
T. W. Pierce, Fiske & Co., Inc., Boston, Mass.
A. B. Myers, A. B. Myers & Co., Indianapolis, Ind.
J. W. Van Worth, A. B. Myers & Co., Indianapolis, Ind.
W. R. McKown, Brooklyn Brick Co., Greenfield, Ind.
C. M. Kirkpatrick, Brooklyn Brick Co., Greenfield, Ind.
Ralph Simpkins, Hydraulic-Press Brick Co., St. Louis, Mo.
B. W. Ballou, Kansas Buff Brick & Mfg. Co., Kansas City, Mo.
W. E. Barney, Kansas Buff Brick & Mfg. Co., Kansas City, Mo.
H. W. Bubb, Hydraulic-Press Brick Co., Omaha, Neb.
S. J. Hewson, Hydraulic-Press Brick Co., Minneapolis, Minn.
Frank H. Merrill, Hydraulic-Press Brick Co., Minneapolis, Minn.
Geo. Sterling, Green Brick Co., Sioux City, Iowa.
Wm. P. West, Franklin Brick & Tile Co., Columbus, Ohio.
R. S. Dingledine, Franklin Brick & Tile Co., Columbus, Ohio.
Chas. S. Stratton, Alumina Shale Brick Co., Bradford, Pa.
John B. Sheehan, Penn Brick Corporation, Bradford, Pa.
Edward P. Conley, Bradford Brick Co., Bradford, Pa.
Eben Rodgers, Alton Brick Co., Alton, Ill.
R. L. Mernaugh, Hydraulic-Press Brick Co., St. Louis, Mo.
F. A. Leard, Southwest Building Supply Co., Springfield, Mo.
J. H. Allen, Nebraska Materials Co., Lincoln, Neb.
J. M. Girard, Nebraska Materials Co., Lincoln, Neb.
R. B. Tyler, R. B. Tyler Co., Louisville, Ky.
Victor Anderson, Fort Smith Brick Co., Fort Smith, Ark.
W. H. Gifford, Reliance Brick Co., Dallas, Texas.
Rome F. Williams, Poston Paving Brick Co., Crawfordsville, Ind.
R. C. Stigler, New Orleans, La.
J. W. Bogue, V. V. V. Brick & Tile Co., Neodesha, Kansas.
John D. Key, Key-James Brick Co., Chattanooga, Tenn.
W. A. Laverty, Brazil Clay Co., Brazil, Ind.
F. W. Miles, Hydraulic-Press Brick Co., St. Louis, Mo.
John W. Sibley, Birmingham Clay Products Co., Birmingham, Ala.
E. B. Oldham, Oldham Brick & Tile Co., Lexington, Ky.
F. C. Aschmeyer, Hydraulic-Press Brick Co., St. Louis, Mo.
J. N. Payne, Hydraulic-Press Brick Co., St. Louis, Mo.
J. R. Thomas, Standard Brick Co., Crawfordsville, Ind.
C. C. Landers, Western Brick Co., Peoria, Ill.
A. B. Ames, Hydraulic-Press Brick Co., St. Louis, Mo.
G. J. Supple, Western Brick Co., Danville, Ill.
T. J. Butler, Elgin-Butler Brick Mfg. Co., Austin, Texas.
F. L. Brook, Detroit, Mich.
C. W. Irwin, Hydraulic-Press Brick Co., Davenport, Iowa.
C. A. Gunn, Sec'y Northwest F. B. Ass'n., Minneapolis, Minn.
A. H. Klein, Sunderland Brothers Co., Omaha, Neb.
R. B. Howard, Meacham & Wright Co., Chicago.
J. J. McCoy, Wisconsin F. & F. Brick Co., Milwaukee, Wis.
G. C. Mars, Dept. of Service, Amer. F. B. Ass'n, Chicago.
W. P. Varney, Hydraulic-Press Brick Co., Chicago.
H. L. Matz, S. S. Kimbell Brick Co., Chicago.
F. B. Manson, Pfotenhauer-Nesbit Co., New York City.
G. P. Dean, Pfotenhauer-Nesbit Co., New York City.
J. G. Robertson, Boston, Mass.
A. J. Rogers, Boston, Mass.
Andrew Ayers, Hay Walker Brick Co., New York City.
Harold Parry, Parry Bros. Co., Boston, Mass.
Robert Parry, Jr., Parry Bros. Co., Boston, Mass.
Jacob Mandel, Philadelphia, Pa.
R. R. Ketcham, O. W. Ketcham Co., New York City.
B. K. McKlosky, O. W. Ketcham Co., Washington, D. C.
H. A. Brocas, Buffalo Builders' Supply Co., Buffalo, N. Y.
D. Hollands, Buffalo Builders' Supply Co., Buffalo, N. Y.
J. B. Nicholson, Toronto Fire Clay Co., Steubenville, Ohio.
C. P. McFadden, Toronto Fire Clay Co., Steubenville, Ohio.
E. C. Hervey, Hydraulic-Press Brick Co., Indianapolis, Ind.
E. A. Stewart, Stark Brick Co., Canton, Ohio.
H. E. Stringer, Hydraulic-Press Brick Co., Washington, D. C.
John H. Black, Jewettville Clay Products Co., Buffalo, N. Y.
P. W. Hartung, Belden Brick Co., Canton, Ohio.
C. A. West, Fredenberg & Lounsberry, New York City.
James M. Crowell, Hydraulic-Press Brick Co., Philadelphia, Pa.
H. Hansen, Toledo Plaster & Supply Co., Toledo, Ohio.
A. B. Lyon, Hydraulic-Press Brick Co., DuBois, Pa.
George C. Earle, Hydraulic-Press Brick Co., Zanesville, Ohio.
R. D. T. Hollowell, Secy-Treas, Amer. Face Brick Assn., Chicago.
I. A. Ryttenberg, Sumter Brick Works, Sumter, S. C.
B. Mifflin Hood, Legg Brick Co., Atlanta, Ga.
J. P. Turpen, Moores Coney Co., Cincinnati, Ohio.
J. B. Cooper, Columbus, Ohio.
H. G. Kemper, Cleveland, Ohio.
J. R. Pugh, Cleveland, Ohio.
C. F. Miller, Darlington Clay Products Co., Darlington, Pa.
H. B. Devitt, Niagara Falls, N. Y.
J. M. Adams, Ironclay Brick Co., Columbus, Ohio.
D. Lehman, Ironclay Brick Co., Columbus, Ohio.
J. C. Grinan, Norfolk, Virginia.
J. C. Taylor, Louisville, Ky.
F. R. Carter, Peoria Brick & Tile Co., Peoria, Illinois.
E. C. Marshall, Cincinnati, Ohio.
E. H. Moelering, Moelering & Co., Ft. Wayne, Ind.
W. A. Kernan, Indianapolis, Indiana.
E. T. Horne, Indianapolis, Indiana.
F. C. Schwin, Ft. Wayne, Indiana.
K. K. Thrower, B. Mifflin Hood Brick Co., Atlanta, Ga.
J. C. Perteet, B. Mifflin Hood Brick Co., Atlanta, Ga.
J. C. Larimore, B. Mifflin Hood Brick Co., Atlanta, Ga.
E. W. Garraiux, B. Mifflin Hood Brick Co., Atlanta, Ga.
W. H. H. Jett, Acme Brick Co., Marietta, Ohio.
H. R. Mears, Bloomsburg Brick Co., Bloomsburg, Pa.
D. C. Shorey, Shorey Brick Co., Cincinnati, Ohio.
J. C. Hale, Poston Brick Co., Martinsville, Ind.
W. A. Shoemaker, Bloomfield Brick Co., Indianapolis, Indiana.
S. B. Dobbs, S. B. Dobbs & Co., Philadelphia, Pa.
S. C. Martin, Kittanning Brick & Mining Co., Pittsburgh, Pa.
O. H. Wittpen, Upper Kittanning Brick Co., Jersey City, N. J.
B. E. Thompson, Rochester Clay Products Co., Beaver, Pa.
J. R. Lucktenberg, Burton-Townsend Co., Ashtabula, Ohio.
Wm. H. Lucktenberg, Burton-Townsend Co., Zanesville, Ohio.
J. H. Zinn, Indianapolis, Ind.
E. Clinton Jones, Fultonham Texture Brick Co., E. Fultonham, Ohio.
B. C. Cooper, Fultonham Texture Brick Co., E. Fultonham, Ohio.
H. D. Lounsbury, Fredenberg & Lounsbury, New York City.
A. T. Fielding, Hydraulic-Press Brick Co., Cleveland, Ohio.
James O. Conner, Hydraulic-Press Brick Co., Toledo, Ohio.
G. G. Cowman, Columbus, Ohio.

Walter Purcell, Walter Purcell & Co., Cincinnati, Ohio.
Harry Bateke, Cincinnati, Ohio.
Lou G. Wilke, Cincinnati, Ohio.
E. F. Grand, E. F. Grand Brick Co., Cincinnati, Ohio.
M. McC. Everhard, The Everhard Co., Massillon, Ohio.
C. H. Andrews, New Castle, Pa.
W. B. Winter, Hay Walker Brick Co., Pittsburgh, Pa.
Donnelly Weaver, Brick Sales Co., Cincinnati, Ohio.
Arthur W. Riggs, Brick Sales Co., Cincinnati, Ohio.
C. J. Splain, Brick Sales Co., Cincinnati, Ohio.
J. E. Randall, The Clay-Worker, Indianapolis, Ind.
T. A. Randall, The Clay-Worker, Indianapolis, Ind.
O. G. Knoske, Atwood-Knoske Sales Co., Akron, Ohio.
J. W. Kaufman, Claycraft Mining & Brick Co., Columbus, Ohio.
L. Shephard, Claycraft Mining & Brick Co., Columbus, Ohio.
Geo. A. Keller, Terre Haute, Ind.
F. Graham Williams, F. Graham Williams Co., Atlanta, Ga.
G. E. Carlyle, Carlyle-Labold Co., Portsmouth, Ohio.
W. J. Thomas, Windsor, Ontario.
B. J. Graham, Dennison Interlocking Tile Co., Cleveland, Ohio.
J. E. Morrisey, Cleveland Builders' Supply Co., Cleveland, Ohio.
E. J. Schario, Mapleton Clay Products Co., Canton, Ohio.
Theo. H. Swan, Theodore H. Swan Co., Rochester, N. Y.
H. L. Earley, Louisville, Ky.
C. A. Wilson, Louisville, Ky.
A. H. Farleigh, Louisville, Ky.
E. G. Zorn, Brick and Clay Record, Chicago.
D. F. Stevens, Acme Brick Co., Danville, Ill.
W. E. Whalley, Louisville, Ky.
O. A. Harker, Dixie Brick & Tile Co., Puryear, Tenn.
F. F. Hindman, Fisher Lime & Cement Co., Memphis, Tenn.
R. D. Herbert, W. G. Bush & Co., Nashville, Tenn.
L. J. Bolster, W. G. Bush & Co., Nashville, Tenn.
T. P. Cuthbert, Fallston Fire Clay Co., Pittsburgh, Pa.
L. B. Rainey, Fallston Fire Clay Co., Pittsburgh, Pa.
A. F. Humphrey, Keystone Clay Products Co., Pittsburgh, Pa.
L. W. Gaddis, Gaddis-Harrison Co., Columbus, Ohio.
C. F. Harrison, Gaddis-Harrison Co., Columbus, Ohio.
R. C. Harbison, Dayton, Ohio.
O. P. Longnecker, Gaddis-Harrison Co., Columbus, Ohio.
Wm. F. Berkheimer, Columbus, Ohio.
Wm. J. Pugh, Jr., Cincinnnati, Ohio.
G. A. Stamm, Builders' Material Co., Cincinnati, Ohio.
E. B. Francis, Columbus, Ohio.
J. T. Baker, Hocking Valley Products Co., Columbus, Ohio.
J. T. McCannell, Milton Brick Co., Toronto, Canada.
L. C. Briggs, The Briggs Co., Lansing, Mich.
G. T. Kauer, The Briggs Co., Lansing, Mich.
F. H. Bennett, The Briggs Co., Lansing, Mich.
R. Y. Kilvert, R. Y. Kilvert & Co., Winnipeg, Manitoba.
James P. Williams, Summitville Clay Products Co., Alliance, Ohio.
W. M. Larrabce, Clinton, N. Y.
C. E. Kuhlman, Toledo, Ohio.
R. N. Quessier, R. L. Quessier & Co., Cleveland, Ohio.
A. A. Dew, Derr-Shaffer Co., Akron, Ohio.
L. M. Ludwig, Derr Bros. Sales Co., Akron, Ohio.
John G. Johannigan, Cincinnati, Ohio.
E. E. Acomb, Dayton, Ohio.
F. A. Hoiles, Alliance Brick Co., Alliance, Ohio.
C. E. Jewett, Hocking Valley Fire Clay Co., Nelsonville, Ohio.
R. B. Lukemire, Portsmouth, Ohio.
Ed. Flanders, Marietta Shale Brick Co., Marietta, Ohio.
R. H. Flanders, Marietta Shale Brick Co., Marietta, Ohio.
H. S. Hamilton, McArthur Brick Co., McArthur, Ohio.
L. W. Sprague, McArthur Brick Co., McArthur, Ohio.
F. G. Wilson, F. G. Wilson & Co., Philadelphia, Pa.
G. B. Luckett, Crawfordsville Shale Brick Co., Crawfordsville, Ind.
J. C. Herron, Crawfordsville Shale Brick Co., Crawfordsville, Ind.
G. M. Mossman, Mossman Bros. Co., Huntingburg, W. Va.
H. T. Miles, Sphar Brick Co., Maysville, Ky.
David McGill, David McGill Co., Montreal, Canada.
P. D. Shannon, Beaver Clay Mfg. Co., New Galilee, Pa.
C. H. Rhodes, Beaver Clay Mfg. Co., New Galilee, Pa.
Fred D. Stilz, Irvington Coal & Lime Co., Indianapolis Ind.
Carl Spickelmier, Spickelmier Fuel & Supply Co., Indianapolis, Ind.
F. E. Doerr, Milwaukee, Wis.
Chas. Bonner, Bonner & Marshall, Chicago.
F. C. Solms, Colonial Brick Co., Detroit, Mich.
G. W. Shoemaker, Brazil, Ind.
Ray Danderand, Brazil, Ind.
H. H. Price, American Face Brick Association, Chicago.
J. L. Hughes, Belt Line Brick Co., St. Paul, Ind.
J. T. Leonard, Belt Line Brick Co., Minneapolis, Minn.
F. E. Wilson, Walkers Mills Stone & Brick Co., Pittsburgh, Pa.
R. M Combs, Thomas Moulding Brick Co., Chicago.
R. R. Colburn, Colburn Brick & Tile Co., Minneapolis, Minn.
H. W. Landers, Minneapolis, Minn.
Elmer H. Adams, Adams Childs Bobb & Wescott, Chicago.
J. P. Sullivan, Wisconsin Lime & Portland Cement Co., Chicago.
J. E. Fielder, Acme Brick Co., Fort Worth, Texas.
Locklsley Fife, Acme Brick & Supply Co., Dallas, Texas.
W. J. Degenhart, John H. Black Co., Buffalo, N. Y.
H. L. Baldwin, American Face Brick Association, Chicago.
Harry A. Hansen, Belt Line Brick Co., St. Paul, Minn.
A. G. Gregory, Chicago.
J. L. Doherty, St. Paul, Minn.
N. B. MacNeely, Chicago.
R. L. Witters, Toledo Plaster & Supply Co., Toledo, Ohio.
C. F. Herrmann, U. S. Brick Co., Tell City, Ind.
Gil Landgrebe, Huntingburg Press Brick Co., Huntingburg, Ind.
B. H. Richards, Jr., Richards Brick Co., Edwardsville, Ill.
A. Allen, Richards Brick Co., Edwardsville, Ill.
H. C. Kleymeyer, The Standard Brick Mfg. Co., Evansville, Ind.
John Andres, The Standard Brick Mfg. Co., Evansville, Ind.
E. C. Gaetner, Chicago.
Chas. Spikings, Reliance Brick Co., Des Moines, Iowa.
H. R. Beegle, Beaver Clay Mfg. Co., East Palatine, Ohio.
H. A. Wicklard, Duluth, Minn.
J. C. Johnson, Standard Salt & Cement Co., Duluth, Minn.
G. W. Hafner, Ernst & Ernst, Chicago.
T. B. Martin, Twin City Brick Co., Minneapolis, Minn.
E. N. Folsom, Twin City Brick Co., St. Paul, Minn.
F. C. LaFountaine, Reliance Brick Co., Kansas City, Mo.
R. E. Cope, Reliance Brick Company, Tulsa, Okla.
L. B. Senter, Okmulgee, Okla.
W. G. Van Etten, H. D. Conkey & Co., Mendota, Ill.
O. J. Ellinger, H. D. Conkey & Co., Mendota, Ill.
George Anderson, George Anderson Co., Lansing, Mich.
J. B. Thomas, Crawfordsville, Ind.
D. P. Mahoney, Ballou Brick Co., Sioux City, Iowa.
W. E. Worth, International Harvester Co., Chicago.
A. V. Smith, Streator Brick Co., Streator, Ill.
S. P. Moores, Builders' Material Co., Cedar Rapids, Iowa.
F. D. Squires, Building Supply News, Chicago.
H. A. Smyth, Wisconsin Brick Co., Madison, Wis.
Carl Hassenstein, Carl Hassenstein Co., Sioux Falls, S. D.
George E. Whiter, Windsor, Ontario.
Henry A. Whiter, Windsor, Ontario.
L. D. Binyon, S. S. Kimbell Brick Co., Chicago.
Stuyvesant Peabody, Peabody Coal Co. ,Chicago.
F. Steinhoff, Brick and Clay Record, Chicago.
J. H. Johnson, Western Brick & Supply Co., Lincoln, Neb.
J. D. Corning, Corning-Donahue Co., St. Paul, Minn.
W. T. Hargrave, Standard Brick Co., Crawfordsville, Ind.
J. M. Bell, Chicago.
E. F. Plumb, Streator Brick Co., Streator, Ill.
M. P. Louwerse, B. A. Morman & Co., Grand Rapids, Mich.
G. A. Hanke, Grand Rapids, Mich.
H. N. Barr, Michigan Face Brick Co., Grand Rapids, Mich.
A. H. Condon, Grand Rapids, Mich.
Frank Barrett, Grand Rapids, Mich.
Burt T. Wheeler, Kimbell-Wheeler Brick Co., Chicago.
A. W. Kimbell, Kimbell-Wheeler Brick Co., Chicago.
Geo. Hyde, Hyde & Son, Montreal, Canada.
Adolph Laeffler, Wisconsin Lime & Cement Co., Chicago.
J. A. Davis, Chicago Association of Commerce, Chicago.
C. V. Pierson, Duluth Builders' Supply Co., Duluth, Minn.
A. Pierson, Duluth Builders' Supply Co., Duluth, Minn.
L. V. Madsen, Twin City Brick Co., St. Paul, Minn.
J. D. W. Hale, Twin City Brick Co., Des Moines, Iowa.
Thomas C. Schwier, E. M. Baltes & Co., Ft. Wayne, Iowa.

WASHINGTON POTTERY COMPANY SHIPPING TO NEW

For the first time since the organization of the Inland Empire Pottery Company, at Spokane, Wash., arrangements have been made to ship their products to points farther south than the Portland district. The company has orders to ship two carloads of stoneware a month to San Francisco.

This industry has been a success from the beginning. Its force is working at capacity and is turning out a new earthenware hot water bottle for use in hospitals. This product is made in two models and large orders have been received.

A clay grinding machine has recently been installed to operate in conjunction with the one previously in use and machines for increasing the capacity for turning out large size jars have also been added. These machines are turning out jars of from eight to 30-gallon capacity.

HOW WE SHOULD HANDLE OURSELVES DURING THE PERIOD OF READJUSTMENT

James A. Davis, Manager, Advertiser and Investors' Protective Bureau, Chicago Association of Commerce, Chicago.

I HEARD SOME YEARS AGO an instructor in public speaking say to his pupils, "If you are to speak at a public meeting, be careful to go there while other speakers are on the floor, and hear what they have to say. You will then know what is expected of you. You will have a standard to reach, and you will know what your audience wants."

I have been more than gratified today in hearing some very able thoughts expressed, and well expressed, and I don't wonder now that the brick business has reached the importance economically, commercially and industrially that it has reached, when it has in its ranks such talent as I have heard from today.

Your industry, gentlemen, is the oldest in the world. The first instinct of man is to protect himself, protect himself from the elements, seek comfort. When the first brick was made no man knows. We know that the history of those civilizations contemporaneous with Moses left records of their affairs in bricks. Along one wall of the British Museum, for possibly 100 feet, are stored cylindrical, triangular, flat and square bricks, inscribed with the history of antiquity.

We would have known nothing of Babylon and all its majesty of civilization if it had not been inscribed on bricks.

We know that the expression, "He is a brick," originated before the days of Christ. It is one of the oldest of good fellowship designations.

A famous king visited the King of Sparta. The visiting king expressed his surprise at there being no walls around or citadels guarding its towns. The Spartan King replied, "These is no need of walls around Sparta. The men of Sparta are its walls, and every man is a brick."

Now, it must be borne in mind and it is well that we be impressed with the fact that we are not in any abnormal or unusual condition. Economically we are repeating what has happened after every great social or political upheaval in history from time out of mind. There has always been a disturbed state of mind leading to inflation after all the great wars, and deflation, serious or calamitous, has inevitably followed.

After the Napoleonic wars in 1815 England went through just such another period. The parallel is astonishing, but in that time they braced themselves for it, and when deflation had run its course, the panic of 1825, straightened out her affairs and from that date she began her progress toward commercial and maritime supremacy that she occupied for all the years since. She was then, as we are now, an exporting as well as a creditor nation.

These are periods of stimulation, gentlemen, they are periods that every industry and every nation and every individual must go through with before we begin to know ourselves.

After the Mexican War there was just such another period, ending, through over-inflation, in the panic of 1859. When the Civil War ended we went through another such period. Our highest prices reached three years after the war and deflation began, ending in the panic of 1873.

But bear this in mind, that that war cost $8,000,000,000, the most expensive war that was ever fought. We owed, when we come out of that war, $3,500,000,000. Our total banking resources at that time were less than a billion and a half. Yet the force of American genius and energy took hold of the situation and in spite of the fact of my homeland in the South being brought to a condition of absolute devastation, prostrate and humbled to the dust; in spite of all the heresies, financial and otherwise, that were developed all over the United States, in spite of the panic of 1873, the United States twenty years after was without a dollar of debt, and we entered an unexampled period of prosperity and stability.

Now we are through a more serious war. This last war has cost us $32,000,000,000. Yet today we only owe of that cost $24,000,000,000. Never before in the history of the world was a cost of war, figured on the unit basis, as cheaply fought as this war. We emerged from the war owing $26,500,000,000. We have retired $2,500,000,000 of that cost, and in addition $1,500,000,000 of floating debt.

We are today the most solvent nation of the world. Today our gross debt is only 4.4 per cent of our national wealth; England's is 22 per cent; France, 44 per cent; Italy 37 per cent of their national wealth; Germany owes $42,000,000,000 more than her total wealth.

Now think of it!

Is there any reason for alarm? Are there any problems that are not of a corrective nature that are not solveable by ourselves, guided by reason, prudence and courage?

There are none.

My Southern brother fully expressed my sentiments when he said the solution of the situation is in our hands. It is with ourselves.

Now, there is one thing that history proves to us, and that is that from dawn of recorded time to the present, despite all the changes, political, social and economic, in spite of war, pestilence and famine, in spite of the growth of civilization, human nature has remained the same. It has been the only thing that is unchanged. We are just as selfish now individually as we were in the days of that time when our ancestors roamed the forests living on herbs.

We are moved by exactly the same impulses; we are controlled by the same emotions; we are controlled and influenced by the same desires for personal comfort, for personal advantages, for personal requirements, as we were in those days. Civilization has only given us more to expect and desire.

It is through co-operation, gentlemen, through a united determination to master the problems of our own individual affairs, and as those affairs are related to our collective interests. We are not in a serious situation, by any manner of means. All the elements of panic are present. Don't overlook the fact, but panic is a state of mind—entirely a state of mind. The state of mind of one individual will affect another individual. Then make it a collective state of mind; make it a courageous state of mind; make it a state of mind which leads every man to the same objective along the same lines, and those lines, as stated by my Southern brother, a truly courageous industrial uplift. That is the only way by which this situation can be cured.

Our banking system is sound. Do you realize now why money is tight and high; why it can't be loosened today for the purposes in which you are most interested, the construction of homes and industrial plants? The most important really of all the investments that can be made today are the investments in housing. It can't be released for the reason that since the armistice our banks have expanded their loans and discounts over $7,000,000,000. This is a serious but not dangerous situation. This has not been in consequence of any increased physical production; not in consequence of anything that has meant property; it has been in consequence of an expansion in prices solely.

Therefore prices must be liquidated. They are being

Address made before the Ninth Annual Convention of the A. F. B. A., French Lick, Ind.

liquidated in a most orderly way, a more orderly way than history affords a parallel of.

Are you aware, and unless you have studied the situation very carefully you are not, that according to Bradstreet's prices of commodities there has been a decline from the peak of 41 per cent? England's decline up to date from her peak has been but 20 per cent; France, 15 per cent, so that we stand today as having maintained the greatest and most orderly decline in prices in deflation of any of the belligerents.

Is there any cause for alarm?

None whatever.

We have in banking resources to date $32,900,000,000, let's say $33,000,000,000, the greatest the nation has ever reached, and that after discounting banking resources by a fair percentage of deflational discount.

On the basis that we bonded ourselves after the Civil War we could stand a bonded debt of $70,000,000,000.

Is there any doubt about our solvency?

France is facing the problem that she cannot raise by taxation, almost prohibitive as it is, not quite double her bond interest.

Now all that is given to you for the inferences that you may draw. My story as to finances must always be told with certain reservations. The lesson must be conveyed by inferences, a good deal as Pat entertained his boss.

Pat contributed, through his carelessness, to a serious accident that befell his boss. The boss was taken to the hospital, and when he could see any one Pat felt it was his duty to visit him. He was a little doubtful about his reception, and to brace up he took more than the usual amount of red liquor.

As he reached the bed of the boss he saluted him, but the boss was rather grumpy. Pat drew up his chair and began to tell him a story. The boss was very attentive. "Now tell it again, Pat, and come a little closer." Pat told it again. "Again Pat, and a little closer still." Pat told it again. "Now, Pat, come very close and tell it again." "Well, now, boss, I am very glad that you enjoy my story," said Pat. "Damn your story, Pat," was the boss' reply, "it's that delicious breath of yours I enjoy." (Laughter.)

All this has been told to build up your faith in the foundations on which we must build.

I do not call myself an optimist. I don't like the term. It is expressive of that fatuous philosophy which believes things are coming right because they should be right, without any help on our part to make them so. Optimism is not a stimulant for courage or an antidote for the poison of despair. I don't like it. I agree with my friend who said that every pessimist claims to be an optimist. It means nothing. But I am filled with the courage of a well-founded hopefulness that our period of depression is going to break all records as to its early termination. History has shown us that periods of depression bear a ratio to periods of inflation as 4 to 1; that it takes four times as long for the depression to bring about a recovery from inflation as it does for inflation to reach its peak. That I believe will be dissipated as a record from now on in our country. With our resources, with our wealth, with a currency that no man in this world doubts the value of, and when I tell you today it is legal tender in Mexico, legal tender all through South America, legal tender in Canada, it is not because of the gold that is back of it, it is not because of the resources that are back of it, but it is because the United States and the American people are back of it with their faith and courage. Faith is the great stabilizer of all human relations; faith in ourselves; faith in our abilities; faith in those who are governing us; faith in our institutions; faith in our individualism, and faith in the

(Continued on Page 518.)

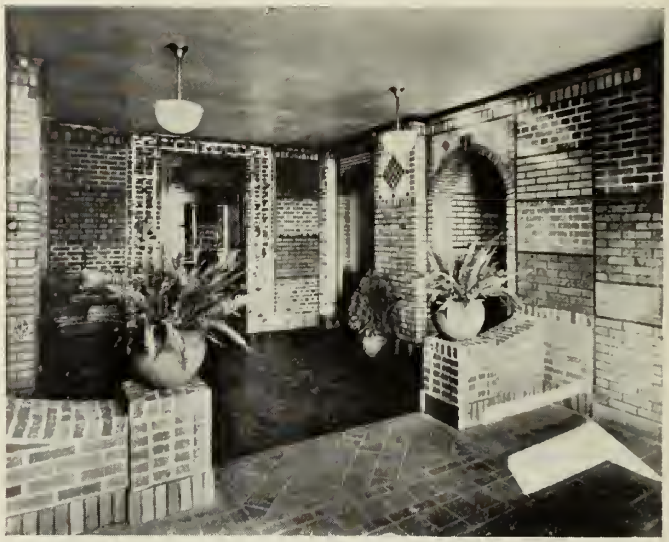
CORRESPONDENCE.

THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Detroit Brick Firm Makes Attractive Office Display.

Editor The Clay-Worker:

We are enclosing a view of the interior of our office. We have tried to make our offices a little more attractive than the average display rooms, as we believe no one is better able to show the possibilities in brick work than those who are familiar with the manufacture and are interested in the sale of face brick. We have laid up panels of our different brick in actual mortar, giving exactly the same effect that you would get in the outside wall. In laying up these panels, we have used various bonds, have varied the size and kind of mortar joints and also used different colored mortar, have constructed piers and arches and special designs, producing effects which we believe are much more beautiful than can be accomplished with any other building material.



Display of Front Brick in Office of the Colonial Brick Co., Detroit.

We might say, incidentally, that we keep all copies of The Clay-Worker for reference.

Yours very truly,
FREDERICK C. SOLMS, Mgr.,
Detroit, Mich. The Colonial Brick Co.

New Clay Mine to Be Ready for Business in the Spring.

Editor The Clay-Worker:

Enclosed find our subscription to The Clay-Worker. We have just opened up a new clay mine at Sebring, Ohio, and are mining a very high grade of fire clay suitable for the manufacture of crucibles and refractories. We had 150 acres of clay, which drillings show to be from nine to fifteen feet and expect to be ready for business early the coming spring.

The company will operate under the name of the Ball-Green Clay & Mining Company.

Thanking you for your courtesies.

Yours truly,
HARRY GREEN.

Starting Right.

Editor The Clay-Worker:

Enclosed find check covering subscription to The Clay-Worker for two years. We have a nice modern plant which we have just put in operation. The plans and machinery were furnished by the Hadfield-Penfield Steel Co., of Bucyrus. We have already spent $85,000 on our plant but expect to add to this next season. We are manufacturing brick, drain and building tile.

QUINWIN BRICK & TILE CO.
Sturgis, Ky.

Prosperous Plant in Texas.

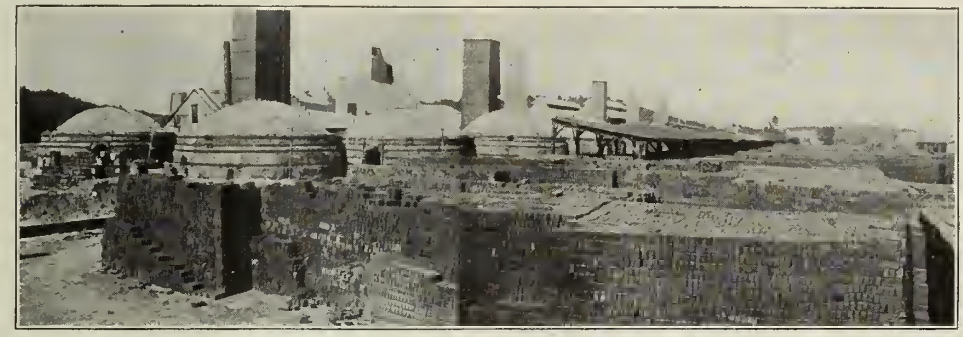
Editor The Clay-Worker:

I am sending you a copy of a print which I think you will find interesting. It shows a few of our kilns and part of our stock of something like 5,000,000 brick now on hand at our Millsap plant. Both this and our Benton plant have been in operation straight through the year and we expect to keep them in operation all winter, except for a short time when we will shut down the Millsap plant to install some improvements, including a new clay shed, hoppers and dry pan feeding conveyors. We have spent something like $150,000 in improvements on the two plants during the past year, and will soon have plants second to none in the country, from every standpoint, including efficient operation.

Guess our business is in about the same condition as that of other face brick manufacturers. The first half of the year we had more business than we could handle, but the last half has been mostly clean up work with orders which had been held over, together with a little scattering business which has come to us since August.

With best wishes.

Yours very truly,
ROY G. SMITH, Plant Mgr.,
Fort Worth, Texas. Acme Brick Co.



Glimpse of Plant of Acme Brick Co., Ft. Worth, Texas.

TROUBLE BREWING IN "KAINTUCK."

Down in the Land of the Colonels, where the corn and the rye doesn't flow anymore by legal permit, there is an orginization called the Kentucky Clay Products Association, of which J. T. Howington, of the Coral Ridge Clay Products Co., Louisville, is president, having succeeded H. C. Cramer of Lexington early in the year. Recently President Howington received in his mail from somewhere in Kentucky the following letter, postmarked on the outside from Lexington.

Some Where in Kentucky,
Same Date,
Same Place.

Mrs. J. H. (?) Hoghntonn,
Corl Hill Clay Products co.,
Loiville, Ky.

Dir Sear:

as a memmber of the ky. CLay production assocciattion i write mr Crammer an ask him in a nice manner when we (meanning us members of the assocciattion) were going to have a meetin. he rite me that you wer the presiddent and that you all had some stattionery printed. what i now rite to ask is what the hell you all done with this said stattionery. let be no by mr. cramer.

Yours for a mettin
I of yourall members

and my dues taxes and dutyies is all of them paid up

President Howington made a fitting reply through H. C. Cramer as requested, then the letters and the questions involved were taken up to the French Lick meeting for counsel and deliberation. The result of these deliberations, carried back by the Louisville delegation, was that the Kentucky Association seems to be going the way of the League of Nations, and they will probably have to use up the stock of stationery on hand in reorganizing.

Meantime there is trouble brewing and hooch stewing and the indications are that the Colonels of the clayworking industry will be called into conference in Louisville some time in February, and if this fails to smooth out the wrinkles, the Louisville delegation threatens to invade Lexington and inspect Cramer's cellar.

WEEK END THEORIES.

FOUND IN the idea propaganda of the day there are some interesting contradictions and week end theories. There is on the one hand a plea for shortening the working week to five days and giving all of Saturday off for shopping and recreation and as a partial cure for absenteeism. On the other hand, there is a medical story to the effect that we have a habit of injuring ourselves at the week ends by an orgy of physical exercise which leaves us exhausted physically as well as mentally. Probably it is well to have these contradictions, as one will help counterbalance the other, but we are reminded by them that we are bombarded with too many half-baked ideas and theories these days, and that most of them will be all the better for a little salting down and seasoning before taking.

A NEW KENTUCKY BRICK PLANT.

THE NEWEST industry at Sturgis, Ky., a few miles south of Evansville, is now in operation. The concern is the Quinwin Brick and Tile Company, one of the finest plants in that section. The company has just opened their first kiln of brick, and while the burning was not perfect, due to the green kiln and somewhat irregular heat, its success was even beyond expectations. Some of the brick are beautiful, and are a fair test of what can be produced at this new plant, which is modern in every respect and surpassed by no other in Western Kentucky, except, perhaps, in size. The machinery is housed in a five floor building, the clay being hoisted to the fifth floor and fed into an immense hopper, reminding one somewhat of a sausage grinder. From this it is dropped into the next, and so on down, mixed with just the proper amount of moisture and on to the moulding and cutting machine, which deposits them on automatic carriers, which convey them to the far end of the building, where they are loaded on the drying cars, ready for the drying room.

The drying room is equipped with an underground waste-heat system. Huge tunnels running under the shed convey the hot air from the furnaces, drawn by immense fans, thus enabling them to dry brick perfectly, even in zero weather.

Two immense kilns are ready for the firing, heated by ten fire boxes each, each kiln with a capacity of 85,000 brick. These kilns are to be equipped with a system which will enable them to control the heat to a degree, thus assuring perfectly burned brick.

The capacity of the factory is 40,000 brick a day, and it will employ about forty men.

The plant as it stands today, cost $80,000, which will far exceed that amount when the contemplated additions are made.

This corporation has a capital stock of $50,000, and is a credit to the business judgment and ability of the men behind it.

The officers, directors and shareholders are as follows: President, W. W. Wynns; vice-president, Fred Alloway, Sr.; secretary-treasurer, Miss Eulah Martin; directors: George T. Davis, B. F. Humphrey, B. W. Dyer, J. Lee Onan and C. T. Wallace; manager, J. W. Quinn; shareholders, B. W. Dyer, J. G. Wynns, George T Davis, W. W. Wynns, Fred Alloway, Sr., J. Lee Onan, T. E. Hopewell, C. A. Nunn, C. H. Ellis, S. D. Martin, Miss Eulah Martin, B. F. Humphrey, Mrs. B. F. Humphrey, J. W. Quinn, C. T. Wallace and W. J. Kern.

THE NEW YEAR.

THE CLAYWORKING industry enters the new year with conditions differing widely from those which prevailed a year ago, and though the trade situation is seemingly not so stirring the conditions of the country are on a sounder and more wholesome basis, which speaks well for the future. A year ago there was a great shortage of help and of products with an urgent demand. Today the demand has slowed down so that the speed of industry is checked, there is a surplus available, a problem of unemployment and a question of how to stimulate active buynig and building. These are questions which we can and will solve, and in the solving of which we should resume industrial and business activity on a better foundation and with a more even balance than existed during the past year. Banking authorities tell us that we have the best banking system ever devised in the history of the world. We have in this country more than half the wealth of the world, with banking resources of 33 billion dollars, and a war debt which amounts to only 4½ per cent. of the national wealth. Therefore we are in a better condition financially than any country of the world at any time in the history of the world. We should find comfort, courage and inspiration in this, and enter into the new year with that spirit of hopefulness and hustle which will beget a return of business activity on a basis that will yield fair profits and a fair division of the returns of production between capital, the management of enterprise, and the workers who help carry it on.

THE YEARLY MEETING OF THE NATIONAL PAVING BRICK MANUFACTURERS' ASSOCIATION.

FRENCH LICK SPRINGS seems to grow in favor for conventions of the clay crafts. In the early winter days "When the frost is on the pumpkin' and the fodder's in the shock," the fancies of brick men lightly turn to thoughts of annual reunions. The ending of a busy season or the temporary cessation of the strenuous work of plant operation leads the thoughtful men in the industry to the contemplation of another year's activity, and they have learned from past experience that they can best meet the problems of the new year by comparing notes with their fellow manufacturers. This can best be done at the annual meetings of the various associations representing the different branches of the industry.

Brick Paved Thoroughfare at French Lick, Ind., Laid in 1910.

On December 7th a half hundred of the captains of the paving brick industry gathered at French Lick Springs in answer to the call of Secretary Greenough for a three days' conference, where they enjoyed a "water-smoking" period, so to speak. Any way, most of them enjoyed the smokes. "Pluto" is beneficial if not enjoyable. A snappy program was provided and held the undivided attention of the delegates, even the allurements of "Brown's Emporium of Amusements" failed to divert them from the business on which they were bent.

The sessions began Monday evening, when the report of the Cost Committee was considered. President Spencer Duty, of Cleveland, was among the first arrivals. He found F. H. Carter, of Peoria, in waiting, he and his wife having stayed over from the face brick meeting. The Executive Officers, Vice-President Will P. Blair, Treasurer C. C. Barr and members of the Board of Directors answered present to the roll call Tuesday morning. Of course, C. C. Blair, of Youngstown, J. G. Barber, of Canton, Eben Rodgers, of Alton, C. P. Mayer, of Bridgeville, were among the "also present." Mr. Mayer was accompanied by his wife, who is still in poor health, having spent most of the time for a year or two in hospitals, and enjoyed the calm and comfort which pervades Tom Taggart's Tavern. R. L. Winslow, Chairman of the Eastern Paving Brick Association, made his presence felt. As a "mixer" he has few equals. His winning smile makes even "Pluto" seem an elixir. He promises to give further exhibition of his skill during the N. B. M. A. convention in New York City the first week in February.

Several instructive papers were presented, one of the best being that of Professor F. H. Eno, of the Ohio State University, on the engineering problems in street and road paving. The sub-drainage of highways is one of the essentials in the making of permanent roads. He told the whys and wherefores in a convincing manner. Mr. H. C. Hadden, editor and general manager of Municipal and County Engineering, Chicago, spoke in an entertaining manner on the need of co-operation with the trade press in all publicity work. The Tuesday afternoon session was devoted to the operative end of manufacturing paving brick. The principal speaker was R. W. Steere, of Cleveland, Ohio. He explained in detail the method of construction and operation of the tunnel kiln, showing a chart of the Dressler kiln, and convinced those present that in economy of operation it is a great improvement over old time methods of burning brick.

Wednesday morning was devoted to executive business, the Board of Governors considering the various committee reports submitted, and outlining the program for the Association's operations the ensuing year, after which there was a joint session of the members of the territorial associations.

A Fine Stretch of Brick Road as Good as New After Ten Years' Use.

French Lick's Brick Paved Streets.

French Lick is a charming hamlet and has one public improvement of which every citizen is justly proud, namely, her brick paved streets. In 1910 two miles of brick paving was laid under the direction of City Engineer Lloyd Collins, and after ten years of use they are practically as good as new, and though subject to fairly heavy traffic bid fair to continue in first class condition for another decade or two without any repairs whatever. The pavements were laid on a six-inch concrete foundation, and though the sub-soil is of a quick sand nature there has been no trouble from that source. The chief advantage from these streets locally is that they are easily kept clean and free from dust and disease breeding refuse. Mr. Taggart has a hobby for cleanliness and everything in and about the French Lick Springs Hotel bears testimoney to his untiring care and painstaking service. That is one of the reasons why it stands pre-eminent as a health resort, and grows in popularity as a convention rendezvous.

PACIFIC COAST NEWS.

THIS IS THE beginning of the dull business in this section, and not much is expected in the way of new brick construction before the early spring. Some of the brick yards are pretty well filled up, and manufacturers will not resume operations generally until the demand has picked up and some of the present surplus has been closed out. A number of orders, some of considerable size, have been withdrawn, and it is generally felt that the low price talk has done a good deal of harm to the late fall and early winter business. The buying public is inclined to hold off in the hopes of lower prices a little later on, or at least by the time that the spring building period begins. Brick men report that, in spite of a slack demand, there is little indication of any easing off in prices, which continue at the old level.

For this time in the year, the Remillard Brick Company, finds that the demand is holding up remarkably well. A good deal of cancelling of orders has been done, but on the whole, the sales have been fairly good, and there is a promise of a seasonable demand throughout the winter. In fact, it has been the shortage of cars that has been largely instrumental in holding down the shipments rather than a serious stopping of orders. The failure of structural steel to arrive has held up several large buildings in this city.

Gladding, McBean & Co. of this city are busy with a number of improvements at their Lincoln, Calif., plant. Six additional drying sheds for the terra cotta department are now well under way and other improvements will be made before the busy season opens next year. Arrangements are being made at the terra cotta end of the plant for one of the biggest seasons on record.

H. Homer Knowles, president of the Homer Knowles Pottery Company, which is preparing to erect a big plant on the Alviso road between Santa Clara and Alviso, Calif., announces that work will be started on the plant within a few weeks. Mr. Knowles now has a representative in Los Angeles and other Southern California points looking into the feasibility of building the plant of adobe bricks, which he believes would be more appropriate than other building material for such a plant as he has in mind.

The California Pottery Company, which has a large plant in operation and which is preparing to erect another plant at Merced, Calif., entertained at its plant last week a considerable number of prominent men from the latter place, who have been instrumental in getting the new plant started. The visitors were taken through the company's Oakland plant, which now has an output of six hundred tons per month, chiefly of building tile and irrigation pipe. The irrigation pipe manufactured ranges in size from 3 to 30 inches. It is given out that the Merced plant, which will be located in the heart of the irrigated belt in the San Joaquin Valley, will turn out approximately 2,000 tons of hollow tile and irrigation pipe per month. Plans are now being made to connect the site of the Merced plant with the main line of the Southern Pacific railroad. The specifications for the Merced plant call for sixteen 30-foot down draft kilns. The first unit will include eight of these, of which it is hoped to have four in operation by next April. Two buildings each 300x300 feet and built of the company's own hollow blocks will house the plant. A separate office building will be erected.

M. J. Dillman, president of the Lincoln Clay Products Company of Lincoln, Calif., reports that the plant is being enlarged and improved preparatory to taking care of an increased demand next year. Additional machinery is to be installed.

The Tropico Potteries, Incorporated, has been incorporated at Los Angeles, Calif., with a capital stock of $1,000,000 by S. M. Haskins, Albert Crutcher, Norman S. Sterry, James A. Gibson, Jr., Edward E. Bacon, H. F. Prince and Karl Lobdell, all of Los Angeles.

THE CERAMIST'S CORNER

This is a department which appears in The Clay-Worker from time to time dealing with practical and technical matters of especial interest to the ceramist. This month we publish the news items from the five Ceramic Colleges which show the progress of these very important schools.

CLAYWORKING SCHOOL IN EMPIRE STATE HAS LARGEST ENROLLMENT IN ITS HISTORY.

THE NEW YORK STATE SCHOOL of Clayworking and Ceramics, at Alfred, New York, opened its twenty-first year with the largest enrollment in its history, the registration being 83, an increase of 53 per cent. over the largest previous registration. The Freshman class alone numbers 32. There are ten states and three foreign countries represented.

With a faculty of five highly trained teachers and several assistants, the students are being given the best technical training in Ceramic Engineering and Applied Art. Many of the embryo engineers spend their vacations in industrial plants, where they acquire practical experience in the special work in which they are interested.

At the present time the demand for ceramic engineers far exceeds the supply, and although there are no graduates from this school unemployed, some are looking for higher or better positions and Professor Binns is always ready to bring employer and employé together so that the right man may fill the right place.

CERAMICS AT IOWA STATE COLLEGE TO RECEIVE MORE ATTENTION.

THE DEPARTMENT of Ceramics of Iowa State College is operating this year under the joint direction of S. L. Galpin and Paul E. Cox. Professor Galpin has been for several years on the faculty in the Department of Geology, dealing particularly with clay problems. His experience and training fit him particularly well to deal with the geological side of ceramic technology teaching. Professor Cox has had wide practical experience, beginning with the operation and management of stoneware manufacture, continuing through the successful building up of the technical side of Newcomb Pottery from a studio art pottery to a successful and well known art pottery factory, and culminating with work in France during the war, with a French corporation engaged in the manufacture of grinding wheels. The faculty combination should be one to give full measure of both theory and practice.

There are eleven men in the course. It is hoped ultimately to graduate about six men a year, this being a good number to supply the estimated needs of the state, with perhaps a few over now and then to help out neighboring states. Thus far it appears that the neighboring states have taken the output. As a consequence the course is being adapted to first satisfy the needs at home, without, however, making the course special in any sense of the word. For example in the electives of the Senior year men are being urged to gain an understanding of business methods and ways both for their own good and for the good of their employers. Also they are being urged to get into business for themselves rather than to accept salaries which, no doubt, at the start, would exceed their own possible profits.

In addition to the classified ceramic men there are fourteen girls and two young men doing work in hand-made pottery as a part of the work required in their courses in other fields. This work, of course, is in the nature of art training rather than ceramic work of an engineering sort. However, they are taught the use of the kiln and the mechanical handling of ceramic problems, the glazes and bodies being given them in recipe form, so that on completion of the course they will be prepared to teach with confidence the work they have taken. The course is very popular, as is always the case with the crafts. People like to make things. It should be noted in passing that were it possible to find time for it, most of the girls at Ames would take a class in pottery making.

The laboratories are being thoroughly overhauled and put in order, the confusion incident to inaction during the war is being cleared away, and a new and practical kiln designed to care for the difficult problems connected with Iowa coal is being planned and will bo built shortly. In every way the effort is being made to make clayworkers who know well how to work clay.

NOTES FROM THE DEPARTMENT OF CERAMIC ENGINEERING AT THE UNIVERSITY OF ILLINOIS.

THE NEW SCHOOL year at the University of Illinois has opened with a larger registration of students than ever before. The number of students enrolled in the Department of Ceramic Engineering is gratifying but not nearly as large as desired, especially in view of the great number of requests received for graduates. Judging from our experience in the past and particularly during the recent months the ceramic industries are entering upon a period of development in which the technically trained man will be indispensable. Clayworkers will be serving their own interests as well as doing young men a service by pointing out to them the wide and attractive field of opportunity in Ceramic Engineering.

The staff has not suffered any depletion, fortunately, notwithstanding numerous temptations of very much larger salaries paid in the industries. Mr. Enoch G. Bourne, who is well known in various pottery centers and especially in Trenton, where he was connected with the School of Industrial Arts, has joined the department as a practical potter. The many demands from other departments of the university for special pieces of apparatus as well as the increasing requirements of our own research work have made such an appointment quite imperative.

Mr. G. R. Shelton has been appointed to the Corning Glass Works Fellowship of the joint Committee on Ceramic Research of the American Ceramic Society and the National Research Council. Mr. Shelton is working on the problem of the viscosity of glass.

Mr. Louis Navias, a graduate student, is carrying on research on certain forms of silica.

Dr. E. N. Bunting is investigating the problem of the character and the amount of gases dissolved in glass during melting.

Mr. Earl E. Libman, of the staff, is studying the reactions taking place in a zinc retort body during use.

During the recent visit to this country of members of the (English) Society of Glass Technology, Professor Cullen W. Parmelee joined the party at Pittsburgh and accompanied them on their visits to various factories in Pennsylvania, West Virginia, Ohio and New York State.

Professor Parmelee is engaged in writing a report on an investigation of clays of Illinois which has been in progress during the past several months.

The annual inspection trip of the upper class students was made during the week beginning Nov. 22. The party, under the direction of Professor R. K. Hursh, visited the Northwestern Terra Cotta Co., The Chicago Pottery Co., The Midland Terra Cotta Co., and the Coonley Manufacturing Co., in Chicago.

From there they went to Ottawa and visited the National Plate Glass Co., The National Fire Proofing Co., and had lunch as guests of the latter company.

At Streator, which they next visited, they went through the plants of the Streator Brick Co., The Streator Drain Tile Co., The Western Glass Co., The American Bottle Co., and the Streator Manufacturing Company.

It is scarcely necessary to state that although a strenuous program was arranged, yet it was made exceedingly pleasant and profitable by the numerous courtesies shown the party by those in charge at the various plants visited.

CERAMIC DEPARTMENT AT OHIO STATE UNIVERSITY DOING PRACTICAL RESEARCH WORK.

THE FUTURE of ceramic engineering, as evidenced by the activities in the Ceramic Department at Ohio State University this year, is exceedingly bright. The men who went out from the Department last year reply most enthusiastically as to the reception in the industry and especially as to the attitude of their employer in the matter of salaries. The work in the Department this year has progressed abnormally well considering the interruptions in connection with the Semi-centennial and the Stadium Drive for a million dollar stadium for athletics, which is just now going over the top.

The sophomore class, which is the first one to register in the Department, is of about normal size, there being nineteen members in this class. The caliber of the men is excellent and the class rating is above the average. The junior class numbers fifteen survivors of a sophomore class of twenty, which indicates that the average loss of forty per cent. between this year's is being reduced through the discouragement of students entering this course who are not in earnest or are not suited to this type of engineering. The senior class is slightly smaller than usual, numbering only seven men. They are showing up excellently and the Department believes it will have occasion to be proud of them. The Department has now three post-graduate students and some excellent research is being carried on in this branch of the Department. At the present time the Department has under way four investigations, one bearing on the determination of the conditions under which sillmanite developed under clays, one bearing on the physical properties of magnesium aluminium silicates, one on eutectic development in alkaline aluminium silicates and one on the development of a high temperature air gas testing furnace. The equipment of the Department has been materially improved by the addition of recording pyrometer presented to the Department through the courtesy of the Brown Instrument Company and by the erection of a number of special furnaces.

The activities on the campus prevented the organization of the local Ceramic Student Section until Wednesday, November 3rd, when a meeting was held for organization and election of officers, at which time talks were made by Dr. L. I. Shaw and R. T. Stull of the U. S. Bureau of Mines. The Department is making elaborate plans for the coming convention of the American Ceramic Society, and expects to demonstrate to the visitors the actual value of this Department of Ohio State University.

NEW JERSEY CERAMIC SCHOOL TO HAVE UNUSUALLY FINE BUILDING.

The last session of the New Jersey Legislature appropriated the sum of $100,000 for the erection of a new Ceramic Building to be located at Rutgers College, State University of New Jersey, New Brunswick, N. J. Plans for the new building are rapidly nearing completion and wo hope to let the contract by the first of February, 1921. The new building will be two stories and basement, 50 x 100 feet. The exterior will be finished in red brick with terra cotta trim. In the basement will be located the storage room, heavy machinery and testing furnaces. The pottery laboratory and research laboratories will be on the main floor. On the second floor will be a chemical laboratory, offices, library and a large lecture room and museum.

The clayworkers of New Jersey, through the New Jersey Clay Workers Association, are taking an active interest in the plans for the new building. Most or all of the ceramic materials used in the building will be partly or wholly donated by the ceramic industries of this section. In this way we will secure a much more elaborate building than would be possible if we were limited to the appropriation made.

The terra cotta will be an unusual feature of the building. It is planned by means of terra cotta panels to portray the different steps in the development of the ceramic industry. All corridors will be paved with tile, and enamel brick and wall tile will be used extensively in the walls of the corridors.

The annual meeting of our New Jersey Clay Workers Association will be held on January 14th, at Rutgers College. At this meeting the usual program of papers will be afforded. The Association has been very active during the past year under the efficient direction of Mr. Abel Hansen, president. Meetings of the Executive Committee have been held nearly every month.

AMERICAN BOND CLAYS.

In a report giving the summary of the activities of the Bureau of Mines for the past fiscal year by Dr. F. G. Cottrell we find this:

"At the ceramic station at Columbus the fact has been established that American bond clays can be used with as good effect in the manufacture of crucibles as imported bond clays. Furthermore, a method has been devised for the purification of white-china clays."

CHINA CLAY FROM ENGLAND.

While the imports of china clay from England were curtailed considerably during the war and we developed our own resources there is evidence of a revival in this trade now. Consular reports from England states that approximately one-third of the china clay mined in England is exported to the United States. During a period of ten years the value of the china clay imports from England have averaged about a million and a half dollars a year. During the fiscal year 1920 the value reached practically two and a half million dollars though the tonnage was not as heavy as in some pre-war years, the difference in value being made up of the higher prices.

No one who knows the facts can escape the conviction that educational ideas and research work have contributed more to the progress of the clayworking industry than any other line of organized activity.

OFFICIAL ANNOUNCEMENT.

THIRTY-FIFTH ANNUAL CONVENTION TO BE HELD IN NEW YORK CITY, JAN. 31 TO FEB. 5, 1921.

Common Brick Manufacturers' Association and the National Brick Manufacturers' Association to Meet for Second Time in Annual Convention

FATHER KNICKERBOCKER again bids the members of the clay crafts to assemble within the gates of his greatest city and promises all who do so at the appointed time, January 31 to February 5, 1921, a most royal welcome and a feast of good things such as no other municipality in all the world can offer. Broadway is more brilliant today than ever before and the avenues of pleasure to which it leads beckons to the members of the N. B. M. A. and all of the affiliated organizations, bidding them come and enjoy a week of recreation intermingled with shop talk, and interchange of trade lore which will leave every participant far better equipped for the ensuing years' business than he could otherwise hope for.

Members of the parent organization will remember with pleasure the delightful week spent with Father Knickerbocker in March, 1917, when for the first time in its thirty-odd years of meandering the brick and tile manufacturers of the United States and Canada gathered in New York City. They learned at that time that the greatest city in the world is really a fine convention town, in spite of the many attractions that lead visitors to go sightseeing both day and night. Notwithstanding all this, the sessions of the convention were well attended and the social functions ditto.

The Common Brick Manufacturers' Association.

Our thirty-fifth annual convention is to be held jointly with the Common Brick Manufacturers' Association of America. A most interesting program is in course of completion and it has been agreed to divide the time on a fifty-fifty basis, so that all in attendance can attend the sessions of both organizations.

Beginning Monday there will be separate meetings of the Executive Officers of each Association. On each of the following days there will be but one session of each Association. The first regular session open to the public, as usual, will be held Tuesday morning. It will be called to order by President Hammond at 10 a. m., and the usual first session's business of the N. B. M. A. will be transacted. At an agreed time President Hammond will turn the gavel over to President Schlake, of the C. B. M. A. when the first open session of that organization will be held, thus the day's session of each Association will be completed without intermission.

Wednesday the order will be reversed, the session will be opened at 10 a. m. by the C. B. M. A., and at its conclusion the N. B. M. A. will begin its second session.

The following day, Thursday, the order will again be reversed, the N. B. M. A. starting the deliberations, and the C. B. M. A. closing with probably its final session, leaving Friday for an exclusive N. B. M. A. session. This is an arrangement which undoubtedly will prove eminently satisfactory to the entire membership of both organizations.

The social functions will be the customary Smokerette Tuesday evening, when all the visitors, including the ladies, will be guests of the Local Committee. The Annual Banquet will be held Thursday evening, on which occasion there will be some unusual talent which will make it a most memorable event. The ladies will be present, of course.

Pennsylvania Hotel Headquarters.

The famous Hotel Pennsylvania will be headquarters during the Convention. It is the world's largest hotel, but more important and interesting than that is that it is a great hotel of character and distinction, the New York home of many thousands of discriminating travelers who want the best the world's greatest city can provide, and they find it in the Hotel Pennsylvania. It has twenty-two hundred guest rooms, each with a bath, and is directly opposite the New York terminal of the Pennsylvania Railway system. In fact, it is connected with same by a subway, so visitors do not have to take the risk of crossing a busy thoroughfare, but instead may call a "red head" to lug the luggage and stroll leisurely to the spacious and beautiful lobby, where polite attendants will receive and show the way to the room in which will be found tub or shower bath and fresh iced drinking water which flows at the touch of a button. In every bed room, whatever, its price there is a telephone, a built-in-wardrobe, provided with coat-hangers, a full-length mirror, an electric reading light attached to the head of the bed, and a portable electric light on the writing desk—besides the lamp over the dressing table mirror and a ceiling light. In the Pennsylvania a morning paper is slipped noiselessly under your door while you sleep—and there is no charge for it in your bill. Every room in the Pennsylvania is an outside room, with an abundance of window-light and air.

The Pennsylvania is as nearly absolutely fire-proof as a building can be, being built of brick and tile, metal and stone, with wood eliminated to an extent which would have been impossible a few years ago.

Reasonable Hotel Rates.

The rates at the Hotel Pennsylvania are very reasonable considering service and equipment. There is a rate card in every room, giving the price which ranges from $4.00 for a single room to $6.00 for a room for two, with double bed. If separate beds are preferred, the rate will be $7.00 and up according to location. Where three or four persons occupy a room together with single beds the rate will be $10.00 and $12.00 per day per room.

One of the praiseworthy general features of this biggest hotel is the variety of accommodations from a luxurious suite of many rooms to a small single room. Also one may choose among many restaurants, and every facility is provided for

Reduced Rail Road Rates to New York City on Certificate

entertaining in one's own sitting room, or in a private dining room.

The Pennsylvania is located conveniently to the shopping districts and the theatre districts, and the business district are easily reached by subway, which has a station in the hotel. Bus lines and surface cars pass the door and the elevated railway is but a block away.

Reduced Railroad Rates.

It is anticipated that a special rate to delegates and those accompanying them will be granted by the Trunk Line Association and concurred in by other passenger associations, as in pre-war times. The certificate plan is to again be inaugurated, which will afford our members a special reduced round trip rate. Full fare will be paid going and a certificate taken, which, when vised by the Secretary, will entitle the purchaser to a reduction for the return trip. Full and specific information will be given in subsequent announcements.

An Unusual View of Lower New York City Taken from the Brooklyn Bridge.

All Affiliated Associations Invited to Participate.

The National Clay Machinery Manufacturers' Association will hold its annual meeting during the week, as will also the local sections of the American Ceramic Society, the common, paving and face brick manufactuers, and the makers of sewer pipe, hollow tile and terra cotta are invited to participate, thus insuring a representative gathering of all the clay products manufacturers of the nation.

Those desiring further information as to requisite of membership in the National Brick Manufacturers' Association, or any other detail of convention arrangements, are requested to communicate with the Secretary at Indianapolis.

THE EXECUTIVE COMMITTEE,
Wm. K. Hammond, President.
Theo. A. Randall, Secretary.

The big items of cost in brick making are fuel and labor. This means that the big opportunities for cost reduction are in fuel saving and labor saving devices.

That slogan, "Build With Brick," introduced and popularized by the Clay-Worker a few years back, is still a good slogan to make active use of in promoting trade extension.

We keep saying that we need more men trained to lay brick, but who can tell us just what is being done about it—how much progress is actually being made in this work?

Plan Affording Low Round Trip Rate to N B M A Convention

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we again inaugurate a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

The Burning Question.

QUESTION: Can you send us some information on the building of round down draft kilns? We are considering the building of kilns of this character and would like to get all the information we can obtain on the subject.

Answer: The best information obtainable on this subject is given in Lovejoy's new book, "Burning Clay Wares." The author goes into the burning question very thoroughly considering the different kilns, method of building, etc.

Burning of Hollow Block and Drain Tile.

QUESTION: Will an open top rectangular kiln without grate bars burn hollow blocks? Will a center stack kiln without perforated bottoms, (grateless) burn sewer pipe. I would like to know where to get blue prints for kilns for burning hollow block and sewer pipe.

Answer: It is possible to burn hollow block in connection with brick in an up-draft (open top) kiln, but the results are not satisfactory. The arches, end and side walls, and every other bench are set with brick. The alternate benches may be set with tile or hollow block. It makes bad setting, the tile or block are apt to roll, and the draft is always more free up through the tile and they are over-burned, or the brick are under burned. The best kiln for a small output of hollow block is some type of round down draft kiln.

Market Price of Kaolin.

QUESTION: Will you please give me the price of different clays, kaolinite for one, say from 35 to 60 per cent. values per ton?

Answer: A clay mass containing 35 to 60 per cent. kaolin would have little market value unless it is washed to remove the deleterious material, and the subsequent value will depend upon the burned color and other physical properties.

November prices on kaolin were as follows:

Georgia kaolin, crude, f. o. b. mines	$9.00	to	$12.00
Georgia kaolin, washed, f. o. b. mines	12.00	to	15.00
Georgia kaolin, washed and pulverized	18.00	to	22.00
Virginia kaolin, crude, f. o. b. mines	8.00	to	12.00
Virginia kaolin, washed and pulverized	15.00	to	40.00
Imported lump kaolin	25.00	to	35.00
Imported pulverized kaolin	30.00	to	60.00

These prices are per net ton and include the dealer's commission.

Weathering Clay.

QUESTION: Is it proper to dig clay in the fall for use the following year? Many people argue that leaving the clay over winter to weather makes it better for working the following spring and summer. Others say that freezing it causes it to lose its life and become pulverized and it will then not pug properly. I would apprciate some information on the subject.

Also what type of kiln is best adapted for the burning of drain tile and other hollow ware?

Answer: It all depends upon the clay and the process of manufacture. Many clays are benefitted by freezing and thawing, particularly sticky clays that are troublesome in drying, and hard clays used in the manufacture of dry press products. We have never known of an instance where such weathering injured a clay.

A round down draft kiln with a fully perforated floor is best adapted to drain tile and hollow block.

WANTS ADDRESS OF FELDSPAR DEALERS.

QUESTION: Will you please give us the names and addresses of different concerns in the United States that market domestic feldspar for glazing stoneware? We have written a number of concerns recently but have not been able to find any who can make immediate delivery.

Answer: At the present time it is difficult to secure feldspar, as most dealers are unable to supply their regular customers. Among the firms who may be able to supply feldspar, are The National Product Sales Co., Baltimore, Md.; Potters Mining and Milling Co., and the Golding Sons Co., both of East Liverpool, Ohio.

Can Watersmoking Be Done with Coal as Satisfactorily as with Wood?

QUESTION: I write you for a little information. First, have you any book on how to burn a down draft kiln? I have a Vogt 30-ft. kiln and we burn some nice pressed brick in it but the center is always soft. How do you get the heat to the center? I have a Brown Pyrometer and here is how we burned the last kiln after watersmoking, took 9 days to watersmoke with wood:

1st day started	with	400 degrees	6 P. M.	1100
2nd day started	1 A. M.	1200 degrees	6 P. M.	1400
3rd day started	1 A. M.	1400 degrees	6 P. M.	1600*
4th day started	1 A. M.	1500 degrees	6 P. M.	1700
5th day started	1 A. M.	1800 degrees	6 P. M.	1900
6th day started	1 A. M.	1875 degrees	6 P. M.	1875
7th day started	1 A. M.	1875 degrees	6 P. M.	1875

We have a Brown draft gauge on the kiln and we held the draft between 15/100 and 25/100 of an inch draft. We have plenty draft, and the last 3 days the heat is held between 1875 and 1900 as this gives us nice red brick.

I have heard a little about letting the kiln soak, this is holding the kiln damper down and not firing. We have never done this and don't quite understand the method.

This kiln has 100,000 pressed brick in its size 2¼x4¼x8¼ inches. They are set 8 on 3 faced set to within 2 feet of top of kiln. The bag walls are 5 ft. high. Kiln has a perforated bottom all over it, the stack is 40 ft. high and we have an awful draft where the damper is wide open.

Would ask that you give me any information you can that will help us.

Now, I would also like to know if you can watersmoke pressed brick in down draft kilns and get clear red brick by using soft coal, if so, how do you proceed? This kiln has a boosted furnace located at the stack to boost the draft when watersmoking, it also has a furnace at each end of the main tunnel that goes through the kiln bottom located at the ends in a pit which is used to heat up the bottom while watersmoking, by using these furnaces we always have a good draft right from the start.

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* (Bottom showed red).

There is a cannel coal mine located near here. Could that fuel be used to watersmoke with? We have been using oak and other hard woods for this purpose but it is getting hard to buy at reasonable prices. This cannel coal is very hot and makes a fine flame but it burns out quickly, the ash is very similar to wood ash. It would be much easier to handle than wood and I believe would be a great deal cheaper.

Answer: Answering the above inquiry, I thought to refer him to "Burning Clay Wares," but on looking through the book I find that Mr. Lovejoy has not gone into the detail of how properly to burn a down draft kiln. Perhaps he has not done so because each clay and each product are a separate problem. It would be an interesting subject for a paper, and I suggest that you refer the inquiry to him.

Your correspondent states that he is burning pressed bricks but he does not say whether they are made dry press or stiff mud, presumably the former. Dry pressed bricks require, as a rule, six to nine days for the watersmoking and four to five days for the burning. Since your correspondent is taking nine days for the watersmoking, we assume that the product is dry press, and in that event he is probably carrying out the watersmoking properly—at least safely, although some dry pressed products require several weeks for safe watersmoking.

After the watersmoke is off, generally, the heat may be raised as fast as possible until settling begins and the heat is through to the bottom. The center usually lags and it is useless to try to work out the dark spot by forcing the fires.

This problem is to be attended to toward the end of the burn. After the settle has a good start, the fires should be slackened a bit but not too much. Keep the settling going but do not let it go too fast, because this will result in overburning the top.

Toward the end of the burn, 24, or 36, in some instances 48 hours, the dampers should be closed to check the draft to the extent that the furnaces smoke at the mouths, then open the dampers to just clear the furnaces. With the closing of the dampers the heat is likely to creep up pretty fast and it is necessary to materially reduce the fires. In this way the dark center can be worked out and a good quality of bricks obtained from all parts of the kiln.

The aim is not to get the temperature any higher on top but simply to hold it steady and give the heat time to work to and spread over the bottom. We call this period the soaking heat, but it is more than that, in that it is a distributing and equalizing period. With a pyrometer one should have no trouble in holding the proper temperature on top until the heat is worked to the bottom.

I do not think the ordinary draft gauge shows anything useful in burning a kiln. I may be an old fogy because I have no use for the draft gauge, but there are others who agree with me in this respect.

In the early stages of the firing we wish all the draft we can get, and toward the end we need only enough to clear the furnaces. In some instances we may check the draft between the two intervals provided the draft is excessive.

I do not know whether in this instance the bricks can be watersmoked with soft coal or not. If the coal is high in sulphur streaked edges may result, yet many yards do watersmoking with soft coal, others with smokeless coal and finish the burn with soft coal.

I have never used cannel coal and do not know what the result will be. The usual manner of watersmoking with coal is to build a small fire in the ash pit, but it is very crude and smoky. It seems to me that with cannel coal, one could make some sheet iron cylinders, with short legs. or blocked up on bricks, in the ash pit and thus get a small and relatively clear fire for the watersmoking. I have in mind a rig something like a tinner's charcoal furnace without the bottom, which have been used in watersmoking with coke.

Good cannel coal is lower in sulphur than the average soft coal, and it is the sulphur that affects the color.

CAREY P. ELLIS.

RECENT PATENTS IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing **The Commissioner of Patents, Washington, D. C.**, and enclosing ten cents for each patent wanted. In ordering, give patent number only.]

No. 1,355,821. Apparatus for Burning Brick. William W. Dickinson, Jr., Little Rock, Ark., patentee.

This patent is given for an apparatus for burning brick, having a plurality of brick kilns each having its interior part of bricks loosely piled and formed with eyes or arches, and having its top and sides formed of bricks closely piled, one of the sides of each kiln being formed with a vertical passageway which communicates at its upper end with the interior of the kiln adjacent to its top and is formed at its lower end with an opening with the eyes or arches of the succeeding kiln.

No. 14,972. Heating Arrangement for Kilns. Guy C. Heilman, Philadelphia, Pa., patentee.

Patent for a kiln or other structure having walls forming a heating chamber, a fuel conduit extending through a wall and discharging into said chamber, an air conduit communicating with said fuel conduit within the wall thereby producing a mixture of air and fuel within the wall.

No. 1,358,055. Hollow Tile. William J. Burke, Brooklyn, N. Y., patentee.

A reversible wall tile comprising two hollow load-bearing members, the height of one member being about one-half that of the other member and each member being provided with walls which are positioned to bound the chamber on all sides, the adjacent walls of the two hollow members being parallel to produce a space intervening said hollow members, and a plurality of short imperforate webs distinct from and positioned intermediate the parallel adjacent walls of the two hollow members and unitary therewith.

No. 1,360,010. Elevator and Conveyor Apparatus for Brick Yards. Charles A. Nelson, East Berlin, Conn., patentee.

An elevator and conveyor apparatus for brick yards comprising in combination a shed conveyor for delivering loaded pallets for setting and a second conveyor for returning unloaded pallets, a yard conveyor, and means for delivering loaded pallets from the said yard conveyor to the said shed conveyor.

No. 1,360,183. Hollow Ceramic Building Block. Joseph J. Cosgrove, Rutherford, N. J., patentee.

Patent awarded for hollow burned ceramic building block composed in part of dense ceramic material and in part of porous ceramic material.

No. 1,360,245. Wall for Brick Kilns. Halver R. Straight, Adel, Iowa, patentee.

Patent for a kiln wall, formed of an inner and an outer wall and a loose yielding filler between them, the inner wall being formed of a series of loosely-laid bricks having their outer ends pointed or beveled, the said bricks being laid in stagger relation relative to each other, and outer wall being formed solid.

No. 1,360,355. Basic Refractory Material and Process of Making the Same. Harry P. Bassett, Cynthiana, Ky., patentee.

This patent is given for a composition which comprises a mixture of magnesium limestone, iron, a compound of silicom and sodium chlorid.

No. 1,360,645. Drier for Clay or Ceramic Products. Ithamar M. Justice, Dayton, Ohio, patentee. Patent assigned to Manufacturers' Equipment Co., Dayton, Ohio.

In a drier for ceramic products, the combination, with drying tunnels having receiving and delivering ends, means for moving the product through the tunnels, fuel tunnels extending beneath the drying tunnels, a stack connected to the fuel tunnels, channels communicating with the stack and with the drying tunnels and air inlets for the receiving ends of the drying tunnels, whereby air introduced into the drying tunnels at the receiving ends will be gradually increased in temperature.

Spaced Relation as in Kilns and the Like. William W. Dickinson Jr., Little Rock, Ark., patentee.

A method of setting a row of bricks upon a horizontal surface in longitudinally separated relation, which consists in feeding said bricks down an inclined support upon said horizontal surface while moving said support horizontally along the surface and guiding the bricks during their passage over the support.

No. 1,332,471. Kiln. Ross C. Purdy, Worcester, Mass., patentee. Patent assigned to Norton Company, Worcester, Mass.

Patent for a ceramic kiln comprising walls defining the sides, top and floor of a heating chamber and a plurality of inlet flues beneath the floor, fire boxes adjacent the exterior of the chamber opening into said flues, a baffle wall opposite the exits of adjacent flues forming a room wherein the gases coming from several fire boxes are mixed, a conduit pipe from said room to the exterior of the heating chamber above the floor and means for exhausting the gases from the heating chamber.

Trade Marks and Designs Patented.

No. 122,658. Pyro Products Co., Chicago, Ill. Use of name "Pyro-Bond" for refractory cement used to bind fire bricks.

No. 122,659. Pyro Products Co., Chicago, Ill. Use of name "Pyro-Putty" for fire brick.

No. 135,602. Bennettsville Brick Co., Florence, S. C. Trade-mark registered for brick products.

No. 136,847. Laclede-Christy Clay Products Co., St. Louis, Mo. Trade-mark registered for fire brick and fire tile.

No. 125,442. R. T. Vanderbilt, Inc., New York, N. Y. Design patented for clay products, with title: "Blue Ridge Clay."

No. 137,605. Formby Petrinite Corp., Jacksonville, Fla. Trade-mark registered for a hardening and strengthening material for use with brick, tile, etc.

Western Clay Man Recovering from Serious Illness.

Samuel Geijsbeek, the well known Ceramic Engineer, of Seattle, Wash., was suddenly taken ill with stomach trouble on November 5th last. After battling between life and death for several days after a successful operation, Mr. Geijsbeek has gained sufficient strength that he was moved to his home on November 30 last, and he will soon be about attending to his daily work.

LARGE BRICK CONCERNS CONSOLIDATE.

A corporation known as The Queen's Run Refractories Company, Lock Haven, Penn., has been incorporated with an authorized capital of $2,500,000 of preferred stock. This company has taken over The Queen's Run Fire Brick Company, The North Bend Fire Brick Company and The West Branch Fire Brick Company, three large fire brick companies operating in the state of Pennsylvania. The officers and directors of the new company will be as follows: President, Charles A. Sleicher; Vice President, William N. Sleicher;; Chairman of the Board of Directors, Harvey S. McLeod; Treasurer, Thomas C. Perkins; Assistant Treasurer and General Manager, George H. Diack; Secretary, John Marshall; Directors—Francis C. Preston, President Dover Fire Brick Company, Cleveland, Ohio; Harry S. Sleicher, President Drake Non-Clinkering Furnace Block Company, Inc., New York City; William N. Sleicher, co-partner West Side Structural Company, Troy; George H. Diack, General Manager Queen's Run Refractories Company, Lock Haven, Penn.; Arthur Cobden, Cashier People's Bank, Lansingburgh; Harvey S. McLeod, President McLeod & Henry Co., Troy; Henry Colvin, Cashier National State Bank, Troy; Thomas C. Perkins, President Thomas C. Perkins, Inc., Hartford, Conn.; Philip S. Ripley, Assistant Treasurer Thomas C. Perkins, Inc., Hartford, Conn.; Charles A. Sleicher, President Troy Foundry and Machine Company, Inc., Troy; John Marshall, Secretary Queen's Run Refractories Company, Lock Haven, Penn.

CINCINNNATI BRICK AND BUILDING NEWS.

ASIDE FROM THE FACT that general building operations have been slow here, due to the conditions that have obtained for some months, the labor agitation has been adding its weight to this state of affairs until it has been effective in curtailing the industry to a still greater extent. However, there seems to be an early settlement to these troubles, and the fact that both the employers and the employes have been getting things into shape for an amicable settlement is very encouraging. The matter has been in the hands of a Wage Board Conference Committee, and all matters pertaining to hours, agreements, wages, etc., are to be taken up by representatives from both sides and settled in a manner agreeable to both interests. This should at least aid materially to stabalize the situation, so that the prospective builders can go ahead with their plans.

While the electricians and plasterers are still on a strike here for higher wages, the other workers, it is believed, will soon resume their labors, and the building industry can then go forward in a way to help conditions, with the idea of a larger demand for materials. Of course prices will have to be reduced to a more or less degree, too, before there will be anything like a revival to the situation. Prices are off on some commodities, and it is likely that soon after the new year there will be still further reductions. The new plan here for arbitrary strikes and labor upheavals will be materially lessened with the new plan that is nearing a satisfactory solution, and this, together with a possible reduction in the wages of some trades that have been unduly high, will also be factors that will prove to be most beneficial to the public.

There has been but a limited number of new plans placed on the market, the advent of winter naturally making the situation less promising, though the weather has been comparatively mild thus far. The reports show that the demands are quiet, and this is to be looked for in view of the above obstacles and the season that is not conductive to many new undertakings. However, if the matter of labor and materials are settled, there should be an early resumption to the building activities, many plans having been made for various kinds of structures.

James H. McCabe, a brick building contractor, has filed a suit in the Superior Court against the Contracting Bricklayers' Association wherein the assertion has been made that there has been an agreement among those of the brick building industry to hold up prices. The suit was brought against Harry S. Applegate, president of the Bricklayers' Union No. 18, and Charles C. Midlam, walking delegate of that union. The matter has not been settled as yet, and the outcome is not certain. The assertion has been made that such a condition does not exist.

The Cincinnati Real Estate Board has sent a letter to the Service Director, Charles E. Tudor, recommending that the plan of Building Commissioner George Hauser, for a revision of the code be carried out. It has been noted for some time that the code in this city has been too drastic as compared with growing centers, and it is believed that many changes could be made without impairing the efficiency of the construction or sanitary features of the average house.

Owing to the uncertainty of the labor situation here it has been decided to withhold any work on the new plant of the Wheatley Pottery Co., which was to have been started on Lester Road, at the intersection of the C., L. & N. Railroad. The estimates were satisfactory, but the feeling of uncertainty in the labor field has been such as to make the company withhold any actual building until such time as the situation does become settled. The plant was to cost $120,000, and the work will be started just as soon as the labor situation does become settled, and the company feels that it can go ahead.

Frederick W. Braunstein, President of the Cambridge Tile Works, of Covington, Ky., with offices in New York and Chicago, died suddenly of apoplexy in his office in Covington, some days ago. At the time of his death he was with his two brothers, Charles and Frank Braunstein, directors of the company, and William S. Berger, general manager of the plant. Mr. Braunstein was 55 years of age, and resided at 112 Wallace Ave., Covington. He was one of the founders of the company, more than 30 years ago, and was secretary and treasurer of the organization until 12 years ago, when he acquired the controlling interest and was made president. He began in a small way, but had made considerable wealth and the output of the plant is now sold in many parts of Europe and South America. While he had been ill during the week previous to his death, the end came very unexpectedly. He leaves a widow and one son, John R. Braunstein. The funeral was held from St. Mary's Cathedral, Covington, and the interment was in Spring Grove Cemetery, Cincinnati.

The new structure for the Home for the Friendless, which is to be builded some time later, will be erected immediately north of Vernon Park, and Harry Hake, architect, has been authorized to prepare the plans for the same. The general plan will be a three-story fireproof building, 190x50 feet, having two wings. It will contain all modern conveniences and improvements. The estimated cost will be about $300,000. Work will likely be started with the settlement of the labor troubles.

The T. H. Winston Co., tile contractors, with offices in the Johnston Building, will move its business to 322 Main street, but this cannot be done for more than a year, owing to the fact that another concern has a lease on the property, though it has been purchased by the above company. The new location will be the company office, storage and wholesale headquarters.

The dormitory to be builded for men at the University of Kentucky, at Lexington, Ky., which will be one of a group of four buildings, will be constructed of brick and steel. It will be four stories high, 120 feet long by 40 feet wide, and fireproof. The plan of architecture will be along the lines suggested by the old Shaker buildings at Shakertown, Ky. A fund of $150,000 was provided for buildings by the last session of the Kentucky Legislature.

An appeal has been made from the decree of United States District Judge John W. Peck, Cincinnati, enjoining the Harbison-Walker Refractories Co., Portsmouth, O., from continuing to work the clay mines located above the coal mines of the Portsmouth Refractories Co., has been filed in the United States Circuit Court of Appeals by the former company. The injunction was issued upon complaint of the Portsmouth Company that operations of the coal mines were interfering with their own operation because of a seepage of surface water, resulting from the defendant's work.

Charles B. Stowe, Lakewood, O., has filed an appeal from the decree of U. S. District Judge John E. Sater, Columbus, dismissing the bill of complaint in the U. S. Circuit Court of Appeals, against the American Refractories Co., Logan, O., wherein he charged infringement of the Davison patent covering a refractory compaund.

The brick and allied clay lines here are dull, and the indications are that the new year will come before there is much noted in the way of a betterment.

The local office of the Wm. E. Dee Co., has been moved from the First National Bank Building to 702 St. Paul Building.

CINCY.

The gas motor as a supplementary power unit in a clayworking plant is growing in interest and importance, and sometimes replaces the electric motor and at other times bringing additional equipment out and out. In a word, it is finding a place in many things from power digging to motor trucking.

BRICK MAKERS OF VIRGINIA MEET TO ORGANIZE.

The largest and most enthusiastic meeting of local brick makers ever held in this state met at the Chamber of Commerce, Norfolk, Va., on Nov. 16th. This meeting was called together by J. A. Pugh of the Nansemond Brick Corporation and J. W. C. West of the Eureka Brick Company, both of Norfolk, for the purpose of organizing the brickmakers of Virginia and North Carolina. The association to be known as the Carolina-Virginia Manufacturers Association.

The meeting was called to order at 11:30 a. m. by J. A. Pugh, chairman. The first speaker was Ralph P. Stoddard, secretary of the Common Brick Manufacturers Association of America, of Chicago, Ill. Mr. Stoddard gave an illustrated talk of great interest, for one hour he went into detail explaining the urgent need of a campaign of publicity and advertising of common brick and explaining the benefits derived from local and state organizations. At 1:30 a banquet was served in the Chamber rooms by the Norfolk Brick Makers. The meeting was again called to order at 3:00 p. m. H. A. Garden was elected president and J. A. Pugh secretary. This was the first step towards organizing the tri-state association. The keynote of the meeting was cooperation, know your neighbor, get acquainted and steal his ideas if they are better than yours. The idea was to get acquainted and exchange ideas and try to make brick cheaper if possible to encourage building. The main questions discussed were cooperation, efficiency, standard size of brick, merchandising brick and publicity and advertising common brick. The meeting was full of vim, everybody running on high gear with a good supply of gas. Optimistic talks were made by a score or more and not one back-fired, all had self starters and puncture-proof arguments.

Mr. Garden, the "Fatty Arbuckle" of the meeting, was the center of attraction among the fun producers. He accused the brick makers of having strong backs and weak heads, big feet and small purses, more debts than Liberty Bonds and always ready to take a loan when they could find a banker who knew very little about the brick business. Mr. Pugh, the Ezra Kendall of the meeting, said the Fool Killer said it was a waste of powder to kill the poor brick maker, let the poor fools alone and they would kill each other.

About twenty firms took out membership in the C. B. M. A. of A. Mr. Stoddard urged all present who were not members of N. B. M. A. to join at once and attend the Convention to be held at the Pennsylvania in New York City, Jan. 31 to Feb. 5, 1921. At this stage of the meeting C. A. Shoop slipped out long enough to be trimmed to the tune of $21.00 for a pair of shoes. On his return he was pretty thoroughly convinced that there was something wrong in Norfolk when you had to sell three tons of brick for $20.00 and pay $21.00 for three pounds of leather. A liberal reward was offered to any one who could point out a millionaire brick King, the money is still in the hands of our treasurer. Following is a list of the brick makers who attended this meeting:

H. L. J.

NEW CONCERN TAKES OVER OLD NEW JERSEY PLANT.

A new company has been formed to take over the plant of the old New Jersey Clay Products Co., more recently known as the Standard Hollow Tile Co., where hollow tile will be manufactured exclusively. John H. Fritzinger, of Perth Amboy, N. J., for twenty years with the National Fire Proofing Company is at the head of the new concern, and associated with him will be John H. Miller, who has been with the National company for nineteen years, at the Perth Amboy office, and H. C. Cooper, who has been with the same company as ceramic engineer and assistant superintendent of the Lorillard works. Mr. Fritzinger is what may properly be known as a self-made man in the clay business, having started in the clay bank of the C. Pardee Works some twenty-one years ago. So rapid was his advancement that in less than two years he was superintendent of the Perth Amboy factory, and for the last six and one-half years, in addition to running the Perth Amboy works, he also has been in charge of the old Lorillard works at Natco, near Keyport, N. J.

THE CLAY-WORKER

Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

THIRTY-SEVENTH YEAR OF PUBLICATION.

Title registered, contents copyrighted.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " "	10.00
Ten copies, " "	15.00

Foreign subscriptions 65 cents additional.

☞Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to

226 East Ohio St. T, A. RANDALL & CO. [Inc.], Indianapolis.

Vol. 74 December, 1920 No. 6

CURRENT COMMENT.

Now for the annual inventory.

* * *

We are squeezing some of the H out of H. C. L.

* * *

A Merry Christmas and a Happy New Year to every reader .

* * *

Let us forget profiteering, but remember that profits are essential to business stability.

* * *

Put a thrift habit clause into your new year resolution and be ready to join in the thrift-week drive.

* * *

Plan service promises to play a star part in promoting the use of clay products in home building during the year.

* * *

Here's hoping that the new year will bring an end to the excess profit-tax, and also conditions that will not endanger the profits themselves.

* * *

For the brick industry there should be a safe middle ground between heavy stocking at high costs and neglecting entirely to provide for probable future demands.

* * *

The fullest measure of human happiness, which is the final goal behind all ambition, is usually attained in mature years from accomplishment through industry for which we are fitted.

* * *

One man tells of a record sale of a million and a half face brick on one job, and this brings a report of two million having been sold once on another, all of which raises the interesting question of what constitutes the record size of a single face brick order.

* * *

Our banking system is getting its acid test and so far has stood it mighty well.

* * *

Brick prices for the new year should be figured on from the cost of production likely to prevail.

* * *

We have had too much optimism and too much pessimism, so let us try hopefulness and hustle for a change.

* * *

The lessened demand for capital to push industrial enterprises should make more money for building operations.

* * *

One of the best signs of the times is in the easing of the tension in the coal trade and the lower scale of fuel cost.

* * *

Though it may seem irregular in its habits, the law of compensation is persistent and positive and must always be reckoned with.

* * *

We have see-sawed from a labor shortage to an unemployment problem, which is but putting the pinching shoe on the other foot for awhile.

* * *

The main requisites for renewed building activity are, easier money and lower labor costs, and we have the promise that both these are coming.

* * *

The first thing to do with your new calendar is to make up that week in which the daddy association of the industry is to hold a convention in the greatest city of the world.

* * *

One report on efficiency by elimination tells of cutting the working force down 10 per cent. and thus increasing the production 25 per cent. Now, following the same line of reasoning, how much of the working force should a man turn away to double his output?

SALESMANSHIP OF THE DEALERS.

For some years now one of the plain needs of the brick industry has been for more salesmanship, and now the industry can take pride and comfort in the order of salesmanship which has been developed by the brick dealers as manifested at the meeting at French Lick. A salesmanship that is broad and liberal enough in its comprehension to be aggressive in pushing sales and at the same time co-operate with the manufacturers and safeguard their interest when things go wrong is a kind of salesmanship that the industry can be proud of and should seek to encourage. With due respect to all the salesmanship originating in and being developed by brick manufacturers themselves, one who has met with and listened to those live wire dealers of the Face Brick Dealers' Association cannot help but feel they are proving a distinct asset to the industry, and are bringing into it a splendid spirit of co-operation as well as an industrious aggressive salesmanship.

BUILDING MATERIAL PRICES.

Since the middle of November there have been reductions in asphalt roofing and similar composition amounting to 25 to 33 per cent. This illustrates some of the tendencies toward lower values in building material and it is one case in which the price lowering was made in one stroke, a reduction cut from a fourth to a third of the previous price. Lumber used in building operations is now down to about half what it was at the high peak last spring, but at that it remains nearly double the pre-war price. There is a feeling, however, that lumber has reached its probable low market, as has composition roofing. Steel products are showing declines and there are some indications of declines in brick and other hard material, but the conditions here are governed largely by labor and fuel and in the final analysis these will determine the possible price levels. Taking it all together there has been enough reduction in material to encourage renewed building if we can get an equal reduction in the labor on the job cost of building operations. Labor cost represents about half the cost of building and it is this item which will play an important part in determining the quantity of building in prospect.

PROGRESS OF INTERIOR TILING.

An interesting feature of the year is the interest being awakened in and the headway being made in the use of floor and interior wall tile. In some respects conditions have been favorable for this. There has been much repair work and alterations to older buildings instead of concentrating on new work and this has furnished an opportunity for tiling. Another thing which has made openings for progress is the more extensive use and the modernizing of the bathroom. Meantime credit must be given to the tile people for aggressive work and for pushing tile for flooring, walls, mantels and for old buildings, as well as new. The tiling progress which is an interesting feature of the year seems to be but merely a forerunner of big things in this branch of the clay working industry, which has for its advantages beauty of appearance, sanitation and permanency.

"IS LABOR PLAYING FAIR?"

Under the above title the Evansville (Indiana) Journal recently ran an editorial containing figures on wages and efficiency in brick laying compiled by the Associated Employers of Indiana. "These figures," the editorial says, "are illuminating in that they show what some of the unions are doing to increase the cost of living and bring discredit on union labor. Here are the figures:

Year	Pay per hour	Bricks per day
1909	$ .55	1,100
1916	.65	900
1918	.80	614
1919	1.00	587
1920	1.25	541

"These figures show that wages increased 18 per cent., 1909 to 1916, while efficiency decreased 18 per cent. From 1916 to 1918, wages increased 23 per cent., and efficiency decreased 32 per cent., while the comparison of 1918 and 1919 shows a wage increase of 25 per cent., and an efficiency decrease of 4.6 per cent. Wage increases in 1920 over 1919 were 25 per cent., with a decrease in efficiency of 8 per cent. Over the whole period, 1909-1920, wage increase of 127 per cent., and efficiency decrease nearly 51 per cent.

"On an eight hour basis the cost to the man who wanted to build a home has gone from $4.40 for 1,100 bricks to $10 for 541 bricks, or from $4 per thousand to $18.50 per thousand for the mere work of laying, to say nothing of the terrific cost of delays. To put it in percentage, the cost of getting brick laid has increased 362 per cent. since 1909. Added to other construction costs, it does not need much more to explain the shortage of housing, not only in Evansville, but all over the country."

It is but fitting to supplement this rather severe indictment of labor with statements and comments heard recently indicating that conditions are materially improving in this respect. Lately labor has realized the necessity for buckling down to work and giving results. Not only brick manufacturers, but men in other lines of industry report noticeable improvements in the productive efforts of workers nearly everywhere. The improvement ranges from 20 to 40 per cent. of increase in productiveness for a given amount of time and wages. This is a hopeful sign and at the present rate of improvement the opening of the building season next year should find a much more satisfactory condition in the productiveness of labor, which in turn will mean lower cost and better conditions for building.

A REVIEW OF BRICK CONDITIONS IN THE SOUTH.

A splendid summing up of brick conditions and brick prices in the South was made by the Salmen Brick and Lumber Co. to the Senatorial Committee on reconstruction and production, of which Senator Calder is chairman. A review is made of the brick plants and the brick industries in Louisiana, showing reduction in prices and pointing the factors which dominate in determining price, the same being labor and fuel. Labor cost for brick making they pointed out has increased nearly 200 per cent., while the efficiency or production of the same amount of labor has lowered materially. Fuel oil, which at one time could be bought at a dollar a barrel, is now more than three dollars a barrel. Coal, which once could be bought for five dollars a ton, now costs from ten dolars to fifteen dollars, and freight rates have increased in some cases 100 per cent . As a result of these and other adverse conditions they estimate that the brick makers who have operated plants in Louisiana would have gotten better returns had they invested their money in mortgages and bonds rather than brick plants.

THE PROBLEM OF THE IMMIGRANT.

There is a general feeling that something ought to be done in the way of amending our immigration laws, and out of this feeling we have a conflict of opinion. Just as Congress goes on record in favor of putting a ban on all immigration for a year the National Federation of Construction Industries comes out with a plea for liberalized legislation to the end that we may fulfill the tradition of the country and keep the doors open to desirable immigration.

The problem which confronts us is not an easy one by any means. On the one hand there is the desire to maintain the traditions of the country as offering an asylum of freedom and opportunities to all desirables who wish to come. Also there is the claim that we need to replenish our labor supply from abroad so as to man our rapidly growing industries. On the other hand, it is easily evident that our hospitality has been abused in the past and that already we have had too much red radicalism and should certainly close the doors against the influx of undesirable who are outlaws of foreign governments and seek this country for their own selfish ends rather than for the upbuilding of the country itself.

This problem of the immigrant is in some respects one of the most serious, as well as one of the most urgent problems before Congress, and it is one in which it is a whole lot easier to find fault with ideas advanced and plans proposed than it is to devise logical working-plans that will admit desirable immigrants and yet safeguard us against an influx of undesirables right at a time when we are likely to have a problem of unemployment instead of a shortage of help. Let us give the matter serious thought, strive to be fair, and seek to help rather than hinder the efforts of Congress to solve this problem.

A "BUSINESS ETHICS LEAGUE."

There is active effort being put forth these days to pull off a convention at Washington, in February, which will develop a business ethics league of America. The purpose is to oppose all forms of gratuities which exist under the name of commercial bribery, tipping, etc. We can all readily and heartily agree with the purpose, especially when we read in the news of the forms of holdups in the building trades and the bribery of business agents of workers to get preference and freedom from strikes. When we consider these things there is an evident need for some concentrated effort. Maybe a business ethics league is the right form for these efforts to take, but sometimes we think a better thing would be a more rigid enforcing of a law, and the putting behind prison bars of more of the people responsible for a condition of this kind.

TRADE LITERATURE.

THE BOOK OF SMILES: The December issue of this delightful little booklet reminds its readers that those of us living in the good old U. S. A. have many things to be thankful for this holiday season, and the wish is expressed that all friends and patrons of the Standard Dry Kiln Company, Indianapolis—see ad on page 496—may enjoy "A Merry Christmas and a Happy New Year." The poetic gem of the issue is the following seasonable offering:

As the Xmas season neared us
  We were searchin' through the flat
For the things that we'd be needin'
  To put on our Xmas "Bat,"
And Ma, she found a quarter
  In Pa's old discarded vest,
An' of course she promptly took it
  And proclaimed the find with zest;
But that's really not a marker
  To what's makin' Father glad—
For he found a quart of likker
  That he didn't know he had.

PROCTOR DRYERS for porcelain and general ware is the title of a beautifully illustrated catalogue being mailed by Proctor & Schwartz, Seventh and Tabor Road, Philadelphia. Any and all who are engaged in ceramic work should add this catalogue to their library. It can be had for the asking from the above firm, whose ad appears on the back cover of this issue. By the use of the Proctor Dryer all uncertainty is eliminated. By their process the elements of drying, air, heat and moisture are combined and controlled in a positive mechanical manner. The Proctor Dryer saves labor, time and floor space and insures an even or uniform product. Write for a copy, mentioning The Clay-Worker.

THE ANNUAL CLAYWORKERS' CONVENTION.

Great preparations are under way for the largest and best convention of Canadian Clayworkers. President William Burgess was a visitor at The Clay-Worker sanctum recently. He was on his way home from a trip of inspection to some of the brick plants in Hoosierdom and stated that the brick and tile industry in Canada is now getting back to normal. A busy season is anticipated the coming year. The annual Canadian convention will be held in Toronto, January 25, 26 and 27, at Hotel Carls-Rite. A large attendance is anticipated and all visitors from the states will be accorded a most cordial welcome. The chief social function will be the annual banquet which will occur Wednesday evening. P. L. Fraser, general manager of the Shale Brick Company, Ltd., will be toastmaster. The principal speakers will be the Rev. Byron Steauffer, a noted Canadian orator, and Mr. Charles H. Bryan, of Detroit, Mich. For full program of events, address Gordon C. Keith, Secretary, 51 Wellington St., W., Toronto.

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WANTED

High grade man for district superintendent of several plants manufacturing fire brick, sewer pipe, and fireproofing; give full particulars. Address

HIGH GRADE,
12 1 d Care Clay-Worker.

WANTED

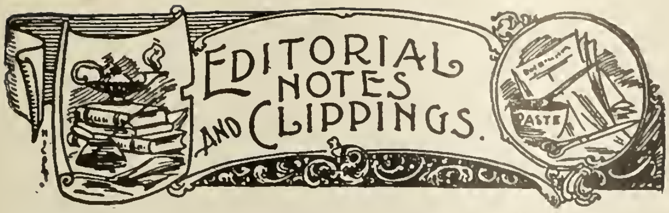
Competent man to take full charge, install and operate a brick plant of 20,000 daily capacity. In answering give list of equipment needed, probable cost, and salary expected. Can have interest in plant if desired. Both clay and coal on the R. R. Fire clay under coal to be used and surface clay for cheap brick and tile. Address

L. S. POWERS, Mgr.,
Central Ky. Block Coal Co.,
12 1 cm Hawesville, Ky.

FOR SALE

2,000 wooden pallets; two lift trucks; one New American Eagle repress; one Raymond Champion semi-automatic brick cutter; two No. 2 Potts disintegrators; one hand repress; one 30-in. by 60-in. piano wire screen. This equipment is all in first class condition and for quick delivery is being offered at very low prices. Address

STAMFORD BRICK WORKS,
12 1 d Stamford, Texas.



EDITORIAL NOTES AND CLIPPINGS.

The Brinkley Brick & Tile Co., of Coleman, Tex., recently booked an order for a big office building in Dallas.

A number of improvements are being made in the plant of the Lincoln (Calif.) Clay Products Company. M. J. Dillman is president of the company.

The Stamford Brick Works, of Stamford, Calif., has been incorporated with $75,000. The incorporators are Charles Brewington, J. P. Brewington and W. T. Andrews.

O. J. Mekkelson, Duluth, Minn., writes that he wishes to get in touch with manufacturers of brickmaking machinery. His address at present is Fifth Ave., Hotel Duluth.

The Jellico Coal & Clay Company, of Jellico, Knox County, Tenn., has been incorporated by G. A. Atchley, Thomas and Peter Zechini, H. G. and J. A. Fowler. The company is capitalized at $50,000.

The plant of the Lovell (Wyo.) Brick & Tile Company, which was closed down sometime ago, through action brought by creditors, has resumed operations under an agreement with the creditors and a reorganization of the owners.

The Robinson Clay Products Company, of Akron, Ohio, have moved their offices to the eleventh floor of the Second National Bank Building, occupying almost the entire floor. The company reports exceptional business at present in vitrified sewer pipe, fire brick and stoneware.

The Daphne Manufacturing Company, of Daphne, Ala., has just completed the installation of an equipment for the manufacture of brick and hollow tile. The plant is to have a daily capacity of 40,000 brick. The company will also manufacture pottery and other earthenware.

The North Iowa Brick & Tile Company, at Mason City, Iowa, will give a bonus as usual to its employes just before Christmas. This custom of giving bonuses was instituted some years ago, and has proven very successful. It amounts to approximately five per cent. of the employe's wages.

The plant of the Enid Vitrified Brick Company, of Enid, Okla., which has been running to full capacity since the first of the year, has closed down for the winter months. The kiln and stock sheds are all full, and they figure they have enough stock on hand to enable them to take care of their orders between now and early spring.

Because of ill health, Edward Menges, president of the National Brotherhood of Operative Potters, tendered his resignation the first of December to the Executive Committee of the organization, to become effective January 1st. Mr. Menges has been president of the potters' organization for nine years, and had served as secretary for eight years.

The Fraser Brick Company, of Dallas, Texas, has announced a 25 per cent. reduction in the price of hollow tile, which became effective the first of the month. J. H. Payne, the manager, gives lower fuel costs and increased plant efficiency as the reason for reducing prices just now. Be that as it may, the reduction will probably have the effect of stimulating building in that section.

W. W. Dickinson, Jr., manager of the Arkansas Brick & Tile Company, Little Rock, Ark., advises that they will complete the improvements they have been making at their plant by the first of the year and will then have the most up-to-date brickmaking plant in the United States. They have been over eighteen months at the work, but a visit to the plant will be an education for brick men. The improvements include a kiln shed 1,200 feet long, doubling the capacity of the dryer, a fifty-five ton revolving steam shovel, two locomotives, fifteen electric motors, tipple electric transfer car, overhead trolley crane and setting machine, complete system of automatic conveyors for grinding brickbats to mix with the clay, overhead system of returning empty dryer cars to machine, two miles of railroad to a recently opened clay bank, waste heat fan and dryer, electric pumps in clay pit, complete oil burning equipment, which includes a 2,500 barrel oil tank, and electric lighting system for the entire plant. Mr. Dickinson will be at the New York convention where he will be glad to tell his many friends about this wonder plant.

The National Shale Brick Company, of Martinsburg, W. Va., has revised plans under way for a new plant to cost approximately $25,000. F. Vernon Aler is president.

W. Kloppenburg, Gulfport, Miss., writes that he has a deposit of clay suitable for making front brick, and is in the market for brickmaking machinery and supplies.

The plant of the Monmouth Clay Manufacturing Company, at Monmouth, Ill., was burned to the ground December 12th. The loss is estimated at $500,000.

A charter has been granted the Superior Basic Brick Company, of Pittsburgh, Pa. The company will manufacture and deal in brick, ladle linings, paving brick, and other clay products.

A class in pottery making has been established at the Newton-Booth School at Sacramento, Calif. The pupils are being instructed in clay mixing, designing and coloring, molding and baking.

A number of improvements have been made to the Van Briggle Pottery, at Colorado Springs, Colo., recently, and the company a short time ago burned a 100 per cent. kiln—that is a kiln in which every piece of pottery was perfect.

The plant of the Clay Products Company, of Knoxville, Iowa, has been closed down temporarily for the purpose of making some much needed repairs. O. L. Mick, the manager, expects to have everything in running order again shortly after the first of the year.

The Northern Clay Company, of Auburn, Wash., of which Paul S. MacMichael is president and general manager, has had a good season, running to full capacity since the first of June. During the war the plant was closed for some time, but has booked contracts to keep them busy for some time.

The Hampton Brick & Tile Co., of Hampton, Iowa, which was organized sometime since, has decided to start work at once on their new plant. Plans for same have been drawn by the Claude Smith Company, of Sheffield, Iowa, and it is expected to push the construction work through the winter months, so the plant will be ready for operation by spring.

Additional storage is being provided for 2,000,000 brick at the plant of the Belden Brick Company, Port Washington, Ohio, by the erection of an immense storage shed. The work is being done by the employes of the plant, the brick making department being closed down until the construction work is finished. This will give the company storage space for 7,000,000 brick.

Friends of James Miller, founder and for fifty years proprietor of the Oakland Art Pottery Works at Oakland, Calif., held a Thanksgiving Reunion at the old Miller home on Thanksgiving Day. Mr. Miller, who is now eighty-eight years old, is still hale and hearty and never fails to show up at the pottery works from nine in the morning till four or five in the afternoon.

The Murphysboro Paving Brick Company, at Murphysboro, Ill., is experiencing a water famine. Lack of rains this season has caused the immense reservoir of the company to go dry, and the company is hauling 10,000 gallons a day from the city water plant. They have plans under way to sink a deep well, and they are also interested at present in opening up a small coal mine.

The Gladding, McBean & Company, which has one of the largest terra cotta plants in the country at Lincoln, Calif., is now erecting six additional drying sheds, and will add several more a little later. This plant was destroyed by fire about three years ago, and the new plant is now about the last word in clay plant construction. Their product is shipped to all sections of the country.

The Nitro Brick & Tile Company is a new West Virginia concern recently incorporated to manufacture brick and other clay products. Construction work on the plant will be started now ere long, so it will be ready for operation early in the spring. It will have an initial capacity of 30,000 brick per day. T. G. Saunders and A. M. Herschberger, of Charleston, are interested. They are now operating successful brick plants.

The A. P. Green and the Josephine brick plants, of Mexico, Mo., both of which are operated by the A. P. Green Fire

Brick Company, are now running on a seven hour day plan, as a means of reducing expense of output. As the men are paid by the hour, this will reduce the payroll somewhat and yet not effect the men to a great extent. Mr. A. P. Green, manager, thought this plan much preferable to closing down the plants, and needless to say the men agreed heartily with him.

Work has begun on the plant of the Friderichsen Floor & Wall Tile Company, at Independence, Mo. The factory building will be 130 by 170 feet, fireproof construction. The factory will be in charge of C. Friderichsen, who came from Copenhagen, and who has been in this line of work all of his life, the last eight years in this country. This will be the only factory of the kind west of Indianapolis, and the company has great hopes for the future of the concern. H. L. Harmon is president, Fred Bergschneider, vice-president, John F. Brady, secretary and treasurer.

An agreement has been reached between the owners of the Richards Brick Company ,of Edwardsville, Ill., and the employes, by which the wages have been reduced to 18 per cent., and the price of brick $2.00 a thousand. The manager, B. H. Richards, had a conference with the men, agreeing to reduce the price of brick with a view of stimulating building and a consequent demand for the product, if the men would accept a wage reduction which would enable them to keep the plant going. The new scale will average from $4.00 to $7.00 per day, according to the character of work done, and the company has agreed to keep the plant in operation the year round.

A BOY AT CHRISTMAS.

If I could have my wish tonight it would not be for wealth or fame,
It would not be for some delight that men who live in luxury claim.
But it would be that I might rise at three or four a. m. to see
With eager, happy, boyish eyes, my presents on the Christmas tree.
Throughout this world there is no joy, I know now I am growing gray,
So rich as being just a boy, a little boy on Christmas Day.

I'd like once more to stand and gaze enraptured on a tinseled tree,
With eyes that know just how to blaze, a heart still tuned to ecstacy;
I'd like to feel the old delight, the surging thrills within me come;
To love a thing with all my might, to grasp the pleasure of a drum;
To know the meaning of a toy—a meaning lost to minds blase;
To be just once again a boy, a little boy on Christmas Day.

I'd like to see a pair of skates the way they looked to me back then,
Before I'd turned from boyhood's gates and marched into the world of men;
I'd like to see a jack-knife, too, with those same eager, dancing eyes,
That couldn't fault or blemish view; I'd like to feel the same surprise,
The pleasure, free from all alloy, that has forever passed away,
When I was just a little boy and had my faith in Christmas Day.

Oh, little, laughing, roguish lad, the king that rules across the sea,
Would give his scepter if he had such joy as now belongs to thee!
And beards of gray would give their gold, and all the honors they possess,
Once more within their grasp to hold thy present fee of happiness.
Earth sends no greater, surer joy, as, too soon, thou, as I shall say,
Than that of him who is a boy, a little boy on Christmas Day.

—Edgar Guest.

CONVENTION DATES.

Nebraska Brick & Tile Association, Lincoln, Neb., January 11, 12 and 13. Florence Immerhausen, Secretary, Orpheum Bldg., Lincoln.

New Jersey Clayworkers' Association, Rutger's College, New Brunswick, N. J., January 14. George H. Brown, Rutger's College, New Brunswick, N. J., Secretary.

Canadian Clay Products Association, Carls-Rite Hotel, Toronto, Canada, January 25, 26, and 27. Gordon C. Keith, 51 Wellington St., W., Toronto, Ont., Secretary.

National Terra Cotta Society, Chicago, Ill., January 28 and 29. Oswald Speir, 1 Madison Ave., New York City, Managing Director.

National Brick Manufacturers' Association, Hotel Pennsylvania, New York City, January 31 to February 5. Theodore A. Randall, 211 Hudson St., Indianapolis, Ind., Secretary.

Common Brick Manufacturers' Association, Hotel Pennsylvania, New York City, January 31 to February 4. Ralph P. Stoddard, Schofield Building, Cleveland, Ohio.

American Ceramic Society, Deshler Hotel, Columbus, Ohio, February 21, 22 and 23. Charles F. Binns, Alfred, N. Y., Secretary.

Kentucky Clay Products Association, Old Inn Hotel, Louisville, Ky., latter part of February. J. Crow Taylor, 642 S. 40th St., Louisville, Secretary.

One of the biggest problems before the industry right now is that of how to get clay products properly laid up in walls at a reasonable cost. It means that we need more trained men and more mechanical devices to lighten the burden of work, and increase its productiveness.

Type "B" ¾ cu. yd. ERIE Shovel, owned by McCrady Bros., Braddock, Pa.

"Very stiff clay, 750 cu. yds. a day"

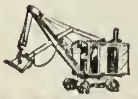
"We have loaded, on the average, 750 cu. yds. of very stiff clay per ten-hour day.

We prefer the ERIE to any other shovel we have ever used. In our opinion the ERIE has everything else of her size beat a mile."
McCrady Bros., Braddock, Pa.

The ERIE Shovel is both speedy and *reliable.*

It is built far stronger than the usual standard of steam-shovel construction.

We would like to send you a bulletin showing just what the ERIE shovel can do. Write for a copy of Bulletin "W."



BALL ENGINE CO., Erie, Pa.
Builders of ERIE Steam Shovels and Locomotive Cranes, ERIE Railway Ditchers, BALL Engines.

ERIE Revolving Shovels

BALL Engine Co. Erie, Pa.

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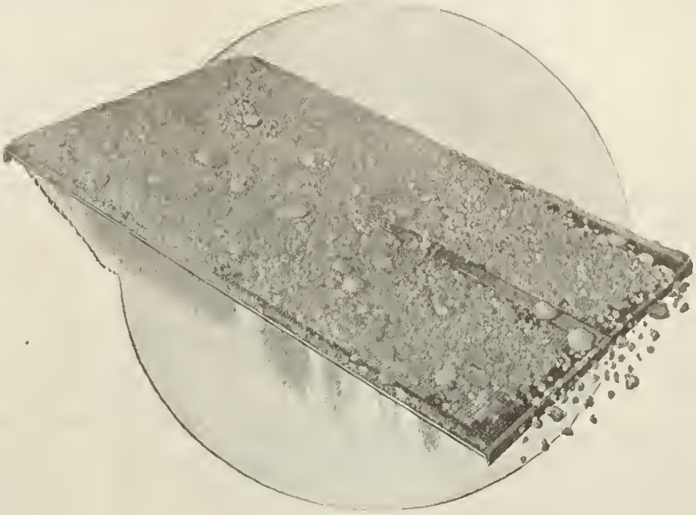
Applies Electro-Magnetic Vibration to a "Drumhead" Tension Screen



A FEW PROMINENT USERS
OF *HUM-MER* SCREENS

Bethlehem Steel Co.
Pittsburgh Plate Glass Co.
Arizona Copper Co., Ltd.
Ottawa Silica Co.
The Belden Brick Co.
Morris Fertilizer Co.
Goodyear Tire & Rubber Co.
American Smelting & Refining Co.
Continental Portland Cement Co.
Laclede-Christy Co.
The Norton Co.
Diamond Alkali Co.

"Makes wire cloth screen faster and wear longer".

SIMPLICITY *and* SPEED!

THE mechanical simplicity and rapid screening of the HUM-MER is a combination that reduces the operating and maintenance costs and greatly increases the profits of screening.

The taut screen cloth is vibrated by a powerful electro-magnet which requires no lubrication. The intensity of the vibration can be adjusted to any load on the screen or to suit any character or size of material. This adjustment is made by simply turning the hand-wheel at the top of the vibrator.

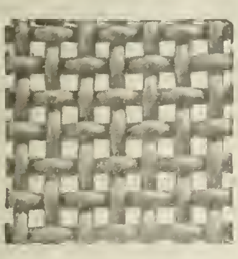
This powerful vibration, adjusted in intensity to the particular material being screened, results in a sorting action and speed of production not approached by any other screening device.

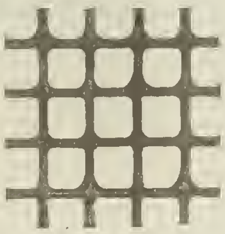
INVESTIGATE WHAT THE HUM-MER WOULD
DO ON YOUR MATERIAL

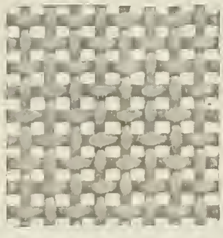
Catalogue No. 42 W sent upon request

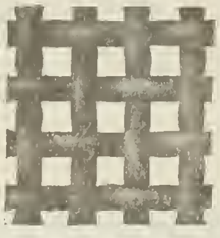
THE W. S. TYLER COMPANY, *Cleveland, Ohio*

Manufacturers of Woven Wire Screens and Screening Equipment









THE ANNEX
NEW YORK

WHEN Hotel McAlpin acquired The Annex, formerly the Martinique, there was established, first the spirit of enthusiastic attention that never fails to assure a guest that his patronage is valued.

Following closely upon this first important step came others which have proved equally successful—among them an expert Bureau of Information and Assistance which enables a guest to leave the details of his arrival, departure and trips he wishes to make to people who are able and willing to assume them.

Under the direction of L. M. Boomer
Frank E. Jago, Resident Manager

32nd Street and Broadway

NOTES FROM DIXIE LAND.

MEMPHIS BRICK PEOPLE report the December trade as a little quiet due to the cold weather and financial tightness. This does not mean that collections are anything but good, for they are holding up splendidly. But little ne wwork is being projected. Some of the brick and clay firms mention, though, that they have business yet from orders on hand taken three months ago that will keep them active for some time to come. Most of the large work is being finished up in Memphis, but plans are being drawn or sites cleared for other work to be contracted soon. 1921 will open with much promise. Last month's building records in the city of Memphis showed up well. Material dealers report business quiet on sewer pipe, some reductions in roofing, but a healthy inquiry in and out of town. Further South the cold weather does not affect building so much and winter activities are going on. The site is being cleared in Memphis now by the Crews Engineering Co., for the Municipal Market and Auditorium, they having 120 days to complete that work, the contract will doubtless be let in the late spring. The structure, covered by bond issues, will cost about $750,000. It will seat 12,000 people in the auditorium section.

F. R. Thomas Clay Products Co., Central Bank Bldg., reports trade a little quiet, but plenty of work on hand to keep busy for ninety days, being contracts taken some time ago.

The Memphis Brick Supply Co., Goodwyn Institute Bldg., has several good brick contracts on hand and is handling in the Memphis trade Nashville and St. Louis brick, Memphis common brick and Northwestern terra cotta products.

The entire front of the new Pantages Theatre is finished in beautiful white terra cotta and tile products and is one of the showiest buildings on Main street. It will be opened some time in January. The Western Union Telegraph Co., South Second street and Monroe avenue, is almost up so far as the walls are concerned and is a good illustration of red brick work. It is a tall and commodious building surmounted by the usual purple sign of the Western Union Telegraph Co. on both streets near the top of the building inlaid in the brick. It is also quite a showy structure and was designed by Architects Hanker and Cairns and built by the Alexander Construction Co. Gardner and Howe, engineers.

The Fischer-Herbert Brick Co. have greatly enlarged and improved their plant in South Memphis, installing new machinery and will open the year 1921 with the largest facilities in their history.

The Moss-DeVoy Brick Co., which acquired one of the old brick plants in Memphis the present year, have rehabilitated the same and are quite active in local and out of town contracts.

Jno. A. Denie Sons Co., 82 South Front street, Memphis, is having quite a normal winter trade on fire brick, sewer pipe, roofing and similar products.

Fischer Lime and Cement Co. have been delayed somewhat in completing their new warehouse on Walnut street, but this addition will be completed early in 1921, and give them about the handsomest material warehouse and office building in the South. The structure across the street from their place, which they have been building of red vitrified brick for the Continental Piston Ring Co., is about completed and is a very large structure. The Fischer Lime and Cement Co. report their building material trade at Little Rock as holding up actively for the season.

Crump Lime and Cement Co. in southeast Memphis, on Willett street and Lamar Boulevard, report good winter trade in roofing, fire brick and similar products.

Architect Raymond Spencer, of Memphis, has completed plans for a $65,000 brick high school at Como, Miss., which will have stone trimmings, steam heat and be modern in all its appointments. The contract is to be let the next few days.

The Porter Pottery Co., McCall Bldg., recently opened in Memphis, reports good activity in clay and pottery business.

DIXIE.

THE UNDERWOOD PRODUCER GAS BURNING SYSTEM

PATENTED

This system represents the development of fundamental principles of the application of Producer Gas to a great variety of furnaces in widely diversified industries. These principles with the highly developed equipment for applying the gas stimulate and extend the use of raw producer gas as the ideal and economical fuel. Industries that have used producer gas for many years have found new and wonderful economic improvement by the use of this system.

In the Glass Industry which is closely allied with the clay industry marvelous improvement has been made in many furnaces with highly beneficial results.

In the production of Carbon Products this system has been highly successful in reducing the baking time, saving fuel and eliminating the use of fuel oil to secure the finishing temperature thereby making the economic and practical results most satisfactory.

In the enameling of metal ware the furnaces are operated with much less fuel and their efficiency has been materially increased.

Furnaces used for roasting Ores, only operative formerly with Natural Gas have been made more successful by the use of producer gas applied by this system.

Railroad Continuous Tunnel Kilns, operating dangerously near failure, have been made successful by the application of producer gas under this System.

For operating periodic kilns, both up-draft and down-draft, this producer gas burning system is superior to all other methods of firing.

On your request we shall be pleased to have our Engineers investigate your conditions. Write us about your burning difficulties.

THE MANUFACTURERS EQUIPMENT CO.

DAYTON, OHIO, U. S. A.

Webster's Continuous Down Draft and Continuous Muffle Kilns

Patented in United States, Canada and Great Britain. Marvels of ingenuity and simplicity. Pronounced by experts to be the most perfect and cheapest kilns to construct and the most economical to operate, ever invented or put upon the world's markets.

Equally as economical for burning any class of goods from common bricks to the highest grade ceramics, glazed ware, etc.

HENRY WEBSTER AND SONS,
628 Lexington Avenue, Newport, Ky.

Kiln specialists and consulting engineers. Forty years of practical experience in clay products industries and continuous kilns.

Members N. B. M. A. U. S. A. Institute of Clay Workers Great Britain.

Blue prints of kiln can be seen at Clay-Worker office, Indianapolis, Ind.

HIGH GRADE ALBANY SLIP CLAY

Pottery, Tile and Porcelain manufacturers, who want a high grade slip clay for strictly high class ware will find our cfay unequaled for uniformity. It is not the cheapest but it the best of all American Slip Clays.

Analysis and Prices on request.

JOHN H. JACKSON TILE CO., Inc.
ALBANY, N. Y.

With Chase Flexible and Reversible Bearing and Folding Deck.

Single, Double and Triple Deck Dryer Cars, Transfer and Dump Cars, Turntables, Switches and Trackage.

The Chase Foundry & Mfg. Co., Columbus, O.

HOW WE SHOULD HANDLE OURSELVES DURING THE PERIOD OF READJUSTMENT.

(Continued from Page 514.)

knowledge that the mass of power must be composed of units of power.

Every American citizen is a unit of this great nation, and its power depends upon the strength and courage of every unit, every man, every dollar, and every bit of initiative, inventive and progressive ability within that man.

It may be encouraging to know from an outsider's point of view that you are in an unusually favorable position. It is my business to keep track of economic situations. You have not been in the profiteering class. You have not stored up great stocks of high-priced commodities to take a serious loss on when money is released, when we have found that we are not going beyond but receding from the elastic limits of credit by gradual contraction. There is today in Chicago alone in banking resources 10 per cent of the banking resources of the United States. Awaiting release of investment funds, there is in Chicago alone construction projects amounting to over $210,000,000. Every project in the list, according to our records, is of a housing and revenue-producing character. Not a dollar of that amount is to be used in ornamental or non-productive work.

Construction for revenue purposes, and housing is included in "for revenue purposes" because housing produces rents, and rents are revenue, and rents are wealth, and wealth is based on rents, and construction therefore will be an addition to our fixed wealth. We are short of the necessities in housing. We are short of the necessities for industrial expansion. We are short in the conveniences that brick will produce. Then is it not a logical thing that if you gentlemen will only unitedly, with reference to the face brick, to hollow tile, to common brick, to vitrified tiling, or any other means of a construction in clay products, bring your story to the front, urge it, don't regard your particular line as the only line that should be so forced, give it sound public circulation as to what brick construction means, why construction is a proper use for money, why the money that is now held because of distrust of the situation should be released and invested in the soundest and safest, if the slowest of investments, permanent construction, that is your mission, and you have got a big one.

Of all the basic industries, yours, steel and cement, but more particularly yours and cement, produce wealth without depleting resources. Do you realize that lumber, iron, steel and nearly all the other construction material deplete wealth in creating more wealth?

Clay has only a nominal value in place. You are actually erecting in the conversion of clay into brick, creating net wealth. You are creating it on the same basis as agriculture creates it.

We, this last year, produced out of the ground in agriculture $10,000,000,000 in excess of our net national debt. What you could do in producing brick and forcing it into form and creating revenue would be almost as great an addition to our wealth as our agricultural industry, and just as important, as a sound economic factor.

There are other things than commodities to liquidate, gentlemen. We must liquidate errors.

We, as a people, are sometimes too prone to criticise our laws. A great law-giver and writer in the time of Christ said: "No law can suit the convenience of everyone. We must be satisfied if it be beneficial on the whole and to the majority." We must get over the criticism of our courts.

We must hold up the hands of our bankers. No men have had more serious problems thrust upon them and accepted with courage than our bankers have had since the beginning of the world war, through our participation in it, and through the inflation period which followed. Any act on the part of our bankers might have brought about a serious money panic if it had not been wisely ruled upon. The

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.

THERE HAS BEEN a slackening up in building operations in Evansville and other Southern Indiana towns during the past few weeks, although ideal weather has prevailed, and under normal conditions this would have been very stimulating to building operations. But the times are not normal and have not, in fact, been for some time, and until they do become normal it is not believed that any building projects of considerable dimensions will be started. Contractors and architects are taking a bright view of the situation and seem to believe that next year will witness a great deal of building, especially residence building. While there was more building this year than during any other year since the world war started there has not been enough residence building to meet present requirements, and as a result there is a great shortage of houses in many of the Southern Indiana towns. The prices of building material have been steadily declining for some time past, but even this has not started people to building homes. The old saying that people will not buy on a declining market is holding good in more than one instance.

The largest structural job now under way in Evansville is the Victory Theater at the corner of Main and Sixth streets, that will be finished and ready for occupancy within a few months. A hotel is being built in connection with the theater and when completed it will be the finest theater building in the city of Evansville. The company building the theater is selling stock to help build it. Several large projects in Evansville have been planned but many of them will not be started before next year, and not then unless the business conditions of the country look up a great deal, it is predicted.

Brick and tile manufacturers in Evansville and Southern Indiana are having no difficulty in getting plenty of coal, although fuel prices are the highest that were ever known, and it is said that coal operators and retail coal dealers are now making more money that ever before in their lives and certain coal men in Evansville are known to have made enormous fortunes since the starting of the world war. A well known brick manufacturer at Evansville said the other day that he looked for times to continue rather sluggish for several months to come, but that things ought to look up some by the first of March of next year.

Henry C. Kleymeyer, president and general manager of the Standard Brick Manufacturing Company, at Evansville, has been re-appointed one of the jury commissioners of Vanderburg county by Judge Philip C. Gould, of the Circuit Court. Mr. Kleymeyer has held this position during the past year or two and has given eminent satisfaction.

John Andres, secretary and treasurer of the Standard Brick Manufacturing Company, was "under the weather" a few days ago, but is again able to be at his post.

The potteries in Evansville have had a fine business during the past year, and the volume of trade that has come in has been much larger than for the previous year. The plants have been operated steadily.

Michael D. Helfrich, well known pottery manufacturer of Evansville, has purchased stock in the Evansville Courier, a morning newspaper, and he is now one of the directors of the company. Mr. Helfrich is interested in a number of large indutries of the city of Evansville.

A HOOSIER.

Plainly we are to find the best answer to the housing problems in home building, and this should add interest to the "Own Your Own Home" expositions being promoted in Chicago, New York and other cities.

HOLLOW TILE HOUSING.

The Los Angeles (California) Press Brick Co. has published in book form under the title, "Duraclay Hollow Tile," the result of an interesting prize contest for house designs, together with other interesting facts about hollow tile.

Under the auspices of the American Institute of Architects they conducted an architectural competition for the best design for a $5,000 hollow tile house. The requirements were for a one-story house, exterior walls eight-inch hollow tile, tile roof, and the total cubage not to exceed 16,500 feet, including porches, basement and roofing space, actual cost not to exceed $5,000, including heating, plumbing, wiring and painting. The result of this contest was a series of interesting plans for modest-cost tile houses, which is now published in book form, starting off with the prize plan, which was won by Paul R. Williams, and includes quite a series of the best plans submitted. These plans, together with other pictures of interesting buildings erected of hollow tile, constitute the feature of an interesting book which should do much to promote interest in and the use of hollow tile in solving the housing problem of the country.

SIL-O-CEL Insulation

prevents heat losses from crowns and walls of kilns boilers and all types of heated equipment.
Write for Bulletin F54 describing its advantages and, application.

CELITE PRODUCTS COMPANY

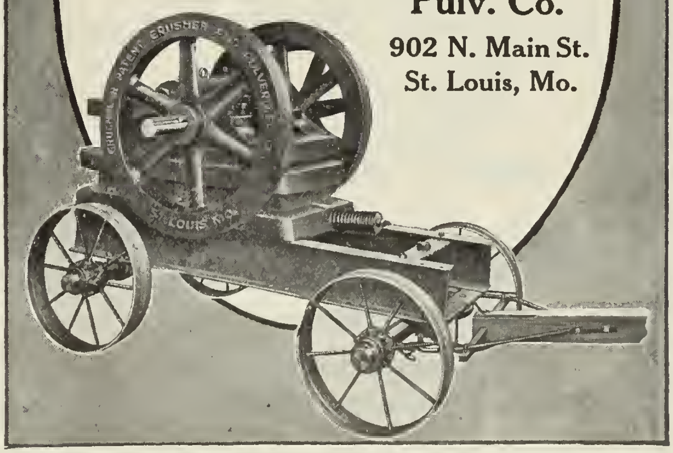
New York · Cleveland · St. Louis
Philadelphia · Detroit · Los Angeles
Pittsburgh · Chicago · San Francisco

THE GRUENDLER JAW CRUSHER

GRUENDLER

Crushers are demonstrating their ability to increase production and reduce operating costs for hundreds of Brick Plants. These mighty machines reduce large or small pieces of clay or other brick material for mixing before entering drying or wet pans. Freedom from repairs and capacity per h.p. have made the GRUENDLER the leader in its field. Stationary or portable. Write for particulars.

Gruendler Patent Crusher & Pulv. Co.
902 N. Main St.
St. Louis, Mo.



DO YOU WANT

Any Thing Used On A Brickyard or a Clay Plant.

We Handle it.
Ask Us.

CHICAGO BRICK MACHINERY CO.

2825 W. Harrison St. Chicago Ill.

Trautwein
DRYERS

PLANT DESIGN
and
CONTROL OF OPERATIONS
Means Much to
The Success of a Manufacturer.

Consultation solicited.

TRAUTWEIN DRYER
AND
ENGINEERING CO.
Clay Works Engineers
10 South LaSalle St.
Chicago, Ill.

"HOW WE SHOULD HANDLE OURSELVES DURING THE PERIOD OF READJUSTMENT."

(Continued from page 548).

financial resources of no nation in the world are as mobile as ours. We can by means of our Federal Reserve System mobilize our financial resources at any part of the nation, where we may expect an attack or financial weakness.

When Kansas City got down to only 8 per cent of her reserve, what happened? The whole resources of the Federal Reserve System were put there to bring her back in a few weeks to 20 per cent. Then why criticise? The problems that these men have to handle over their desks sometimes cause astonishment on my part that they can sleep nights.

The next great error to liquidate is that of labor. We have during our industrial activity for the past three years filled our plants with labor on the basis of numbers, have taken on, because necessary, all the labor offered. Our plants were well filled, but there are not so many employed now. When the great round-up and clean-up comes it will be found that only the most efficient will remain. It will not be at the dictates of labor leaders that we will replenish our working forces on the basis of numbers. We have increased efficiency with a decrease in working force. That fact will ultimately bring to light a new principle, and that principle based on the law of equitable compensation, which is good in all things, economically, spiritually and physically, and that is that compensation is only just when it is in ratio to what we do, and labor hereafter must seek as its scale, not hours employed, but work performed.

And when that is realized as the only logical and just cause for a determination or a basis for a determination of value it will be applied to all of us, for we are all compensated on that basis now, those of us employed in other pursuits than manual labor. And why should the artisan, the skilled workman, the craftsman, be put on the same level of compensation as a hewer of wood, and drawer of water and pusher of wheelbarrow? It is illogical; it is wrong; it is unjust; and anything wrong, illogical, unjust, should not exist in this nation, and it won't.

There are many things more required as a means to bring about a better economic readjustment. A restoration of good faith, a proper appreciation of the fact that on business honor and integrity and the inviolability of contracts must good faith and the stability of confidence be founded, but time does not permit my dwelling upon them.

Money will be freer for legitimate purposes just as soon as the banks feel that the period of deflation is well in hand, and rates for its uses determined thereby; but when, no one can safely prophesy.

But we, in all our organizations, in all our personal pursuits, must realize the duties imposed upon us as good citizens, keep our "heads up and our tails arisin'," as the darkeys say. Don't let anything swerve us from what we think is right. Work together; exchange views; co-operate; unite in one great objective in your own particular line and associated lines, not the gradations and the classifications of those lines, but in great groups. The construction group today has before it the most important of the work. People must be content. They must be comfortable. This condition of unrest that confronts us today is largely because the masses are uncomfortable. They are unsettled. They are unconvinced. Make of them proprietors. The safest condition that a nation can reach is when the majority of its people are proprietors. The man who owns something becomes conservative. The man who has a dollar and his savings at stake in his home or a good investment is not going to be in a hurry to agree with the socialist who says, "Let's have a new deal." He may cheer him; he may applaud him; but he will not back him.

Then let these few convictions that I have as to our situation be suggestive as Pat's breath was of a good tonic. Let every man work toward making us the one real republic of the world, and if we do it, gentlemen, and each does his part in good faith and sound understanding, with a knowledge of our strength, with a knowledge of the great benefits that have been bestowed on us through our having been born in this land, then will we bring our nation to a position of a greater glory and power than even our ancestors dreamed, because they never looked beyond our borders. Then we will become, not only the economic foundation, but the arbiter of the peace and prosperity of the world.

?

What is it you need to put your plant
Equipment in shape to

CARRY ON IN 1921

IT WILL BE A MAN'S JOB

—SPECIALISTS—
IN

DRY PANS WET PANS CRUSHERS
SEWER PIPE AND TILE MACHINERY

THE STEVENSON COMPANY

General Office & Works
WELLSVILLE
OHIO

Western Sales & Engineering Office
801—802 Monadnock Bldg.
CHICAGO, ILLS.

BRICK AND CLAY NEWS FROM MILWAUKEE AND WISCONSIN.

MANUFACTURERS OF BRICK, tile and other clay products who are located in Wisconsin are nearing the end of an unusual year, one that has been featured by extraordinary conditions and problems. Opening during a period of prosperity immediately following an after-war period of reconstruction under favorable money conditions, the year just closing also experienced the situation of liquidation in business and even now is in the midst of a critical time when costs are seeking a lower level from the inflated prices which followed after the beginning of the World War.

Reflection of this situation in the clay products industry is readily discernable from a study of the building and construction field. In Milwaukee, for example, the situation in the building line was indeed favorable early this year but as general business conditions began to change under the influence of deflation, construction work began to ease off. Figures given out by the city building inspection department show that local building operations for the month of November fell far below those of the corresponding month last year and indicate that the 1920 record will be below that of the previous year. During the past month the department issued 1,553 permits, valued at $1,444,776, compared with 1,667 permits for $3,244,451 in construction last November. Considering the year for 11 months, the department issued 21,616 permits representing building operations of $18,720,425, while for the same period last year 18,412 permits were issued for $20,109,567.

Since prices of various kinds of building materials are already showing noticeable signs of declining there is little question in the minds of manufacturers and dealers that there will be a resumption on a large scale after the first of the year. Cuts already effective are believed to be the forerunners of a general drop in the cost of all building materials during the next three months.

"The building depression, the easing up of labor, the reduction of the cost of coal to the manufacturer and the improvement of the railroad transportation situation will bring about a general reduction," said an official of the local supply company. "If prices go down farther, as it appears they will, and labor makes some concessions, I believe this city will experience an unprecedented building boom. I don't believe, however, that building will recover from its slump before January."

From the point of the manufacturer the entire situation is not in the least discouraging. The production of the past season has been fairly well sold up and if continued at all during the winter is not going to produce an oversupply. In fact, with so much building work held off until next year there is great danger of a rush for stocks in spring and the natural result may be firmer or higher prices. Production costs, such as labor, fuel, etc., will very likely be lower next year and this may mean lower prices on clay products. But the manufacturer will undoubtedly find plenty of demand and the price question will be settled by production cost. The demand, in any event, will have a tendency to stabilize prices.

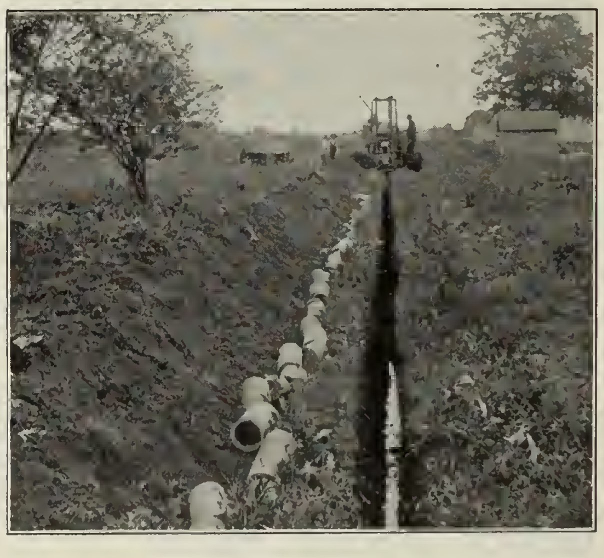
The Wolfax Co. has recently been incorporated at Neenah, Wis., with $50,000 capital stock, by P. E. Allen, George M. Schmid, August Drabe and C. E. Riegel. The new firm purposes to handle all kinds of pottery and porcelain ware and will eventually construct a factory at Neenah to manufacture its own requirements. Temporary offices are being located in the Winnebago building on West Wisconsin avenue, Neenah. J. P. Hrubesky is secretary and treasurer. A. BADGER.

DRAIN TILE MANUFACTURERS
Help The Farmer With His Tiling

YOU can sell more tile and have them laid properly, thus assuring absolute satisfaction and at the same time make profits by operating a ditching machine.

WHEREVER there is a tiling machine increased demand for tile is found.

A TILE manufacturer states he makes more profit from his tiling machine than he does from his tile. He owns two plants and operates several Buckeyes. He is going to order another machine soon. He has no trouble getting contracts and uses up more tile than he can produce.



A Perfect Trench at One Cut

THE BUCKEYE TRACTION DITCHER CO
FINDLAY OHIO

Announcing

A New Auger Machine
For Brick or Hollow Ware

No. 21

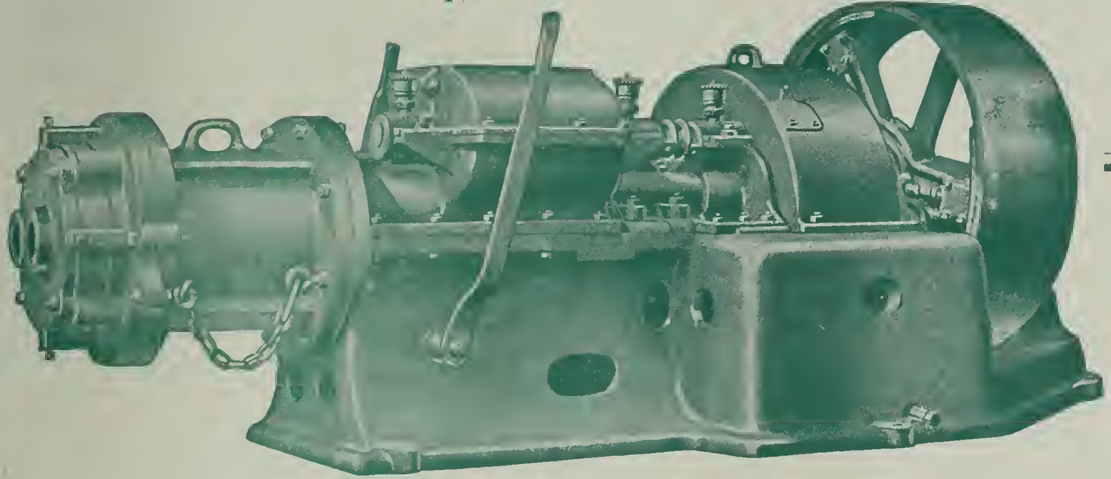
A machine of improved design—thoroughly tried out and proven in every respect. It will make profits by steady dependable operation.

Our bulletin "AP", just issued, describes the new No. 21 in detail. You should have a copy for future use—if you are not in the market at present.

Write Now

THE BONNOT COMPANY
Canton, Ohio

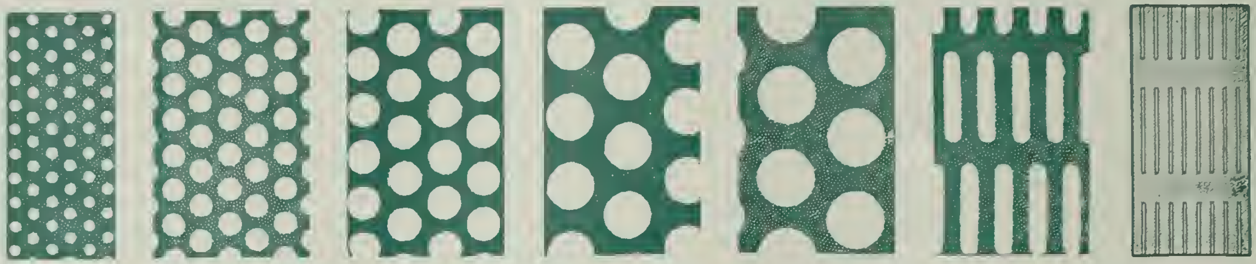
"Let Us Standardize Your Plant."



PERFORATED STEEL SCREENS

FOR CLAY, SHALE, SAND, GRAVEL, STONE AND CEMENT.

Anything You Want in Perforated Metal.



Perhaps you may be interested in some of the sizes shown above; they are a few of the many that we make.

We have sizes suitable for DRY PAN SCREENS, CAR DECKS, CONVEYORS, Etc.

Tell us of your needs that we may send you samples.

The Harrington & King Perforating Co.

NEW YORK OFFICE,
No. 114 Liberty St.

No. 624 North Union Ave.
CHICAGO, ILL., U. S, A.

Gravity and Production Costs.

The two have a very real connection. Gravity will replace much of the power and labor that you now use for the many lugging and hauling jobs in your plant.

The Mathews Gravity Conveyers are built in all sizes, from the complex, built-in systems to the simple sectional one. They can be installed permanently or used sectionally, in doors or out. The ball bearing rollers are made of seamless, drawn steel that stands the gaff of the hardest usage.

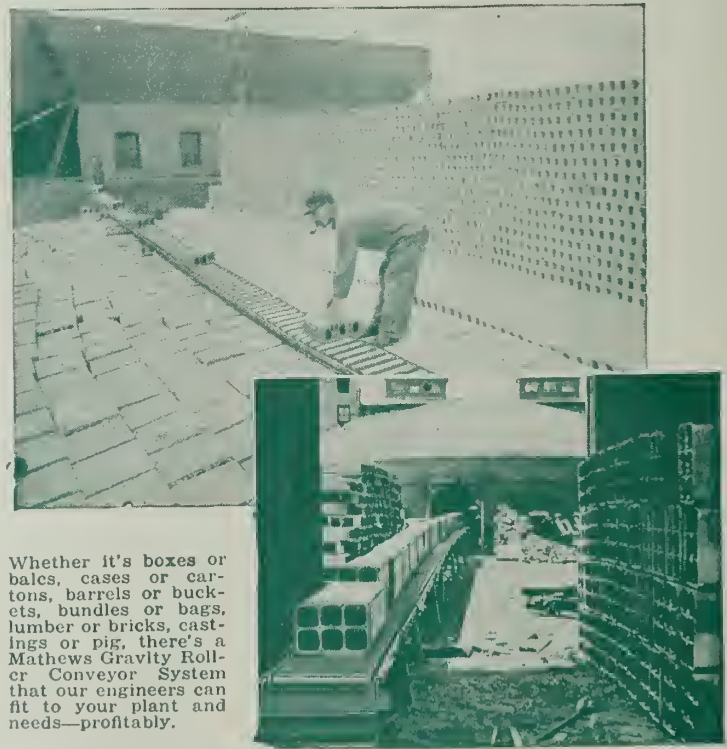
Your lugging problem is not the exception. One of our sales engineers will gladly talk it over with you. Our illustrated catalogue contains a large variety of our latest installations. Write for it.

MATHEWS GRAVITY CARRIER CO.

106 Tenth Street, Ellwood City, Pa.

Branch Factories: Port Hope, Ontario London, England

MATHEWS
SPEED ECONOMY
GRAVITY ROLLER CONVEYER



Whether it's boxes or bales, cases or cartons, barrels or buckets, bundles or bags, lumber or bricks, castings or pig, there's a Mathews Gravity Roller Conveyor System that our engineers can fit to your plant and needs—profitably.

YOUR LAST CHANCE—

THIS YEAR—TO "FIX OVER" YOUR PRESENT PLANT, OR HAVE DESIGNED FOR YOU A NEW ONE.

BETTER "GET IN LINE" **NOW,** FOR NEXT YEAR'S IMPROVEMENTS. IF YOU WAIT 'TILL BUSINESS **"BOOMS"**—AND IT WILL—**NOT YOUR PLANT,** BUT THE PLANTS "LINED UP", **READY** TO FILL ORDERS **PROMPTLY,** WILL GET THE ORDERS.

BETTER TAKE ADVANTAGE OF YOUR "LAST CHANCE".

"FIXERS OVER" OF OLD PLANTS.

DESIGNERS OF NEW PLANTS.

L. E. RODGERS ENGINEERING CO.

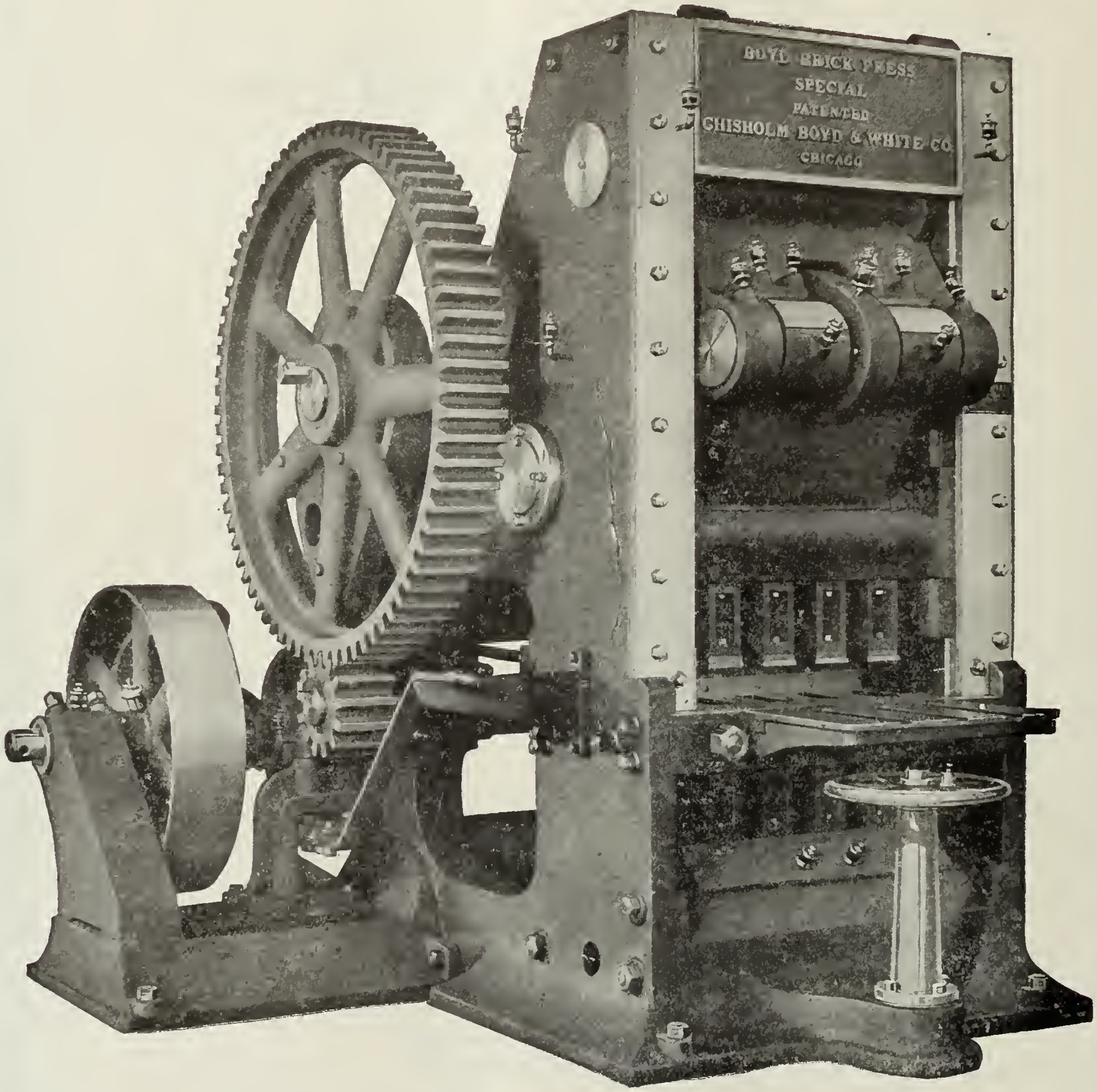
Waste Heat Dryer Specialists
Clay Products Engineers

Largest Manufacturers of Brick Drying Equipment in the United States.

30 North LaSalle Street ∴ ∴ CHICAGO

The Boyd Brick Press

"Built Up to a Standard—Not Down to a Price"



ITS OWN BEST SALESMAN

FIRE BRICK PRODUCED AT LOWER COST

For more than 20 years the BOYD BRICK PRESS has been in use for making FIRE BRICK and shapes, and today is used by many of the largest and most successful fire brick manufacturers in the country.

Chisholm, Boyd & White Company

Office and Works, 57th and Wallace Sts. CHICAGO, ILL.

Make Rough Textures

On **ANY** Dry Press From Any Clay or Shale

We have made, and marketed, millions of Rough Texture Brick on this machine during the past two years.

Progress Press Brick & Machine Co.

Established 1890 (Send for Sample and Circular.) **ST. LOUIS, MO.**

Buyers Ready Reference List.

To Find Any Particular Firm or Advertisement See "Index to Ads" as Cited on Front Cover Page.

Ammeters.

The Brown Instrument Co.
Engelhard, Charles.
Westinghouse Elec. & Mfg. Co.

Arch Cutting Apparatus

Ceramic Supply & Con. Co.

Automatic Clay Bin Emptier.

Fate-Root-Heath Co.

Barrows and Trucks.

Anderson Fdy. & Mach. Works.
Arbuckle & Co.
Brewer & Co., H.
Carnell, Geo.
Chambers Bros. Co.
Ceramic Supply & Con. Co.
Chicago Brick Machinery Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Lancaster Iron Works.
Manufacturers' Equipment Co.
Potts & Co., C. & A.
F. H. Robinson
Steele & Sons, J. C.
Toronto Foundry & Mach. Co.
Wallace Mfg. Co.

Barytes, Carbonate of.

Roessler-Hasslacher Chem. Co.
Williams, C. K. & Co.

Belting.

Gandy Belting Co.
Main Belting Co.
Manufacturers' Equipment Co.

Belt Conveyors.

Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Caldwell & Sons Co., H. W.
Carnell, Geo.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Gandy Belting Co.
Hadfield-Penfield Steel Co.
Lancaster Iron Works.
Main Belting Co.
Manufacturers' Equipment Co.
Potts & Co., C. & A.
The Stevenson Co.

Belt Fastener.

Crescent Belt Fastener Co.

Belt Lacing & Supplies.

Crescent Belt Fastener Co.

Blowers.

Arbuckle & Co.
Hadfield-Penfield Steel Co.
Rodgers Engr. Co., the L. E.
Trautwein Dryer & Eng. Co.

Boilers.

Frost Mfg. Co.
Hadfield-Penfield Steel Co.

Brick (Building).

Kushequa Brick Co.
Purington Paving Brick Co.
Burton-Townsend Co., The

Brick (Fire).

Parker-Russell M. & M. Co.

Brick (Insulating).

Celite Products Co.

Brick (Paving).

Alton Brick Co.
The Burton-Townsend Co.
Hadfield-Penfield Steel Co.
McAvoy Vitrified Brick Co.
Metropolitan Paving Brick Co.
Murphysboro Paving Brick Co.
Purington Paving Brick Co.
Terre Haute Vit. Brick Co.

Brick Conveyors.

Hadfield-Penfield Steel Co.
Mathews Gravity Carrier Co.
Potts & Co., C. & A.

Brick and Tile Machinery.

Arbuckle & Co.
Bonnot Co., The.
Brewer & Co., H.
Carnell, Geo.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Chisholm, Boyd & White Co.
Eastern Brick Machinery Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Frost Mfg. Co.
Hadfield-Penfield Steel Co.
Lancaster Iron Works
Manufacturers' Equipment Co.
Potts & Co., C. & A.
Steele & Sons, J. C.
The Stevenson Co.
Wallace Mfg. Co.

Brick Machines (Soft Mud).

Anderson Fdy. & Mach. Wks.
Carnell, Geo.
Eastern Brick Machinery Co.
Hadfield-Penfield Steel Co.
Lancaster Iron Works.
Potts & Co., The C. A.
F. H. Robinson

Brick Machines (Stiff Mud)

Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co.
F. H. Robinson
Steele & Sons, J. C.
Stevenson Co., The
Wallace Mfg. Co.

Brick Machines (Dry Press).

Anderson Fdy. & Mach. Works.
Chisholm, Boyd & White Co.
Chicago Brick Machinery Co.
Hadfield-Penfield Steel Co.
Progress Press B. & Mach. Co.

Brick Setting Machinery.

Dickinson, W. W.
Hadfield-Penfield Steel Co.

Buffing Machinery.

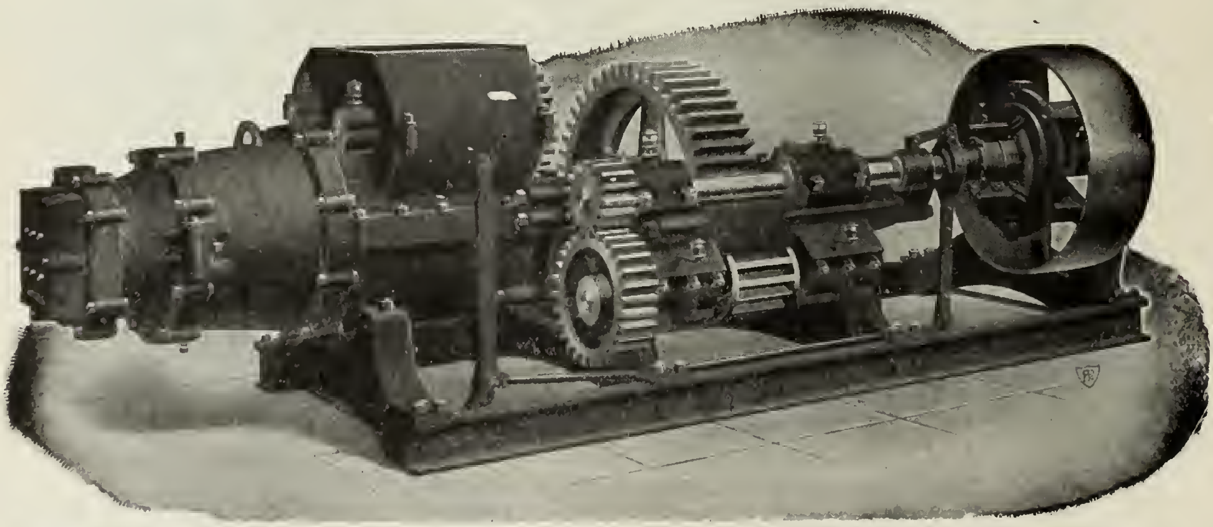
Hadfield-Penfield Steel Co.

Burning and Drying Systems.

Amer. Dressler Tunnel Kilns
Boss, John C.
Ceramic Supply & Con. Co.
Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co.

(Continued on Page 486)

If you want real service—USE THIS MACHINE. Hundreds of satisfied users. Let us tell you about this.



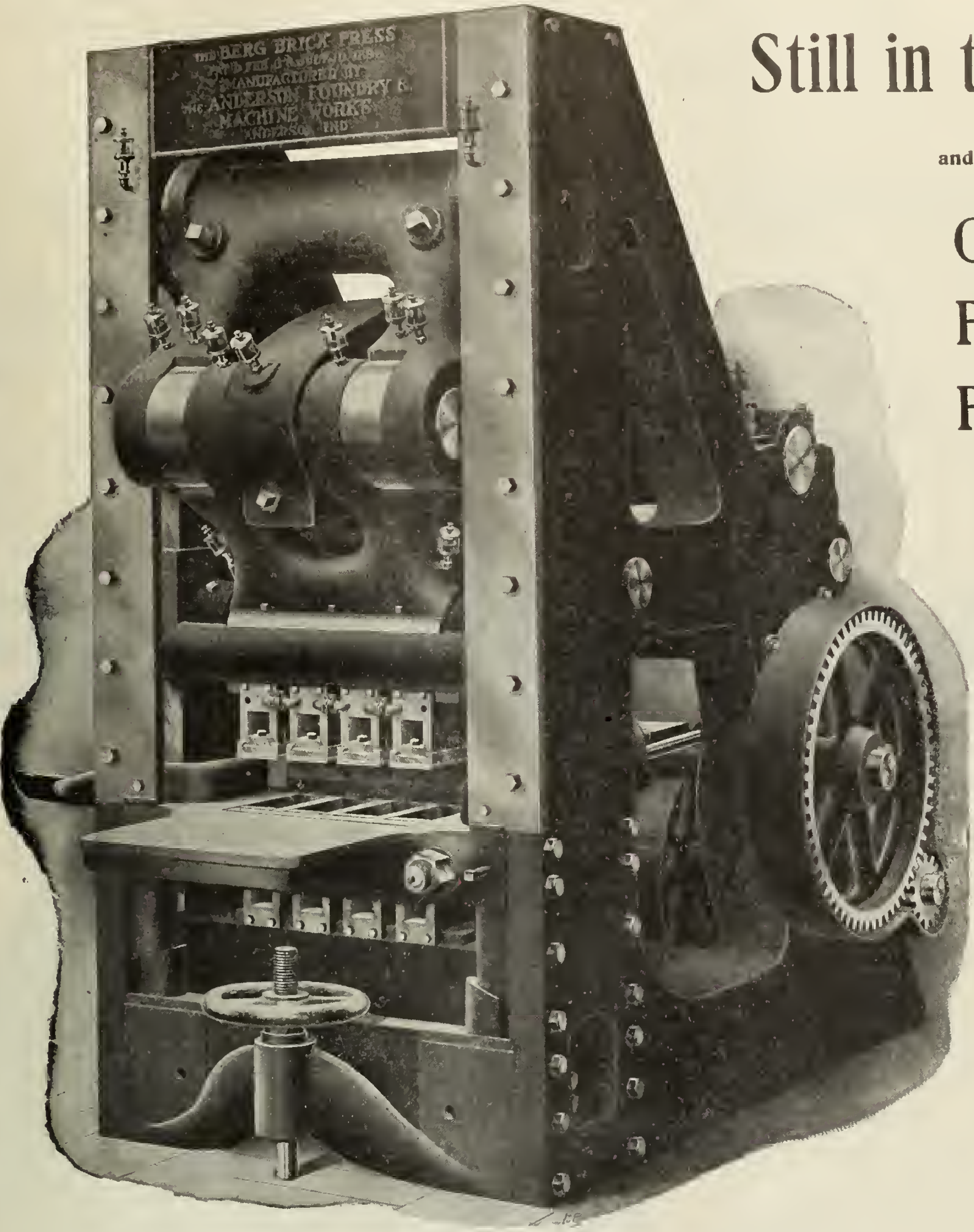
8-E AUGER MACHINE

ARBUCKLE & COMPANY

ARBUCKLE & CO. BUILT FOR SERVICE CLAY WORKING MACHINERY

Rushville, Ind., U.S.A.
WRITE FOR CATALOG

New Model Berg Brick Press



Still in the Lead

and

One Step Further Forward.

Even stronger than ever, and all self-contained.

Greater pressure and fewer working parts than any other machine.

Simple, massive, compact and

SHIPPED IN ONE PIECE.

Manufactured and Sold by

The Anderson Foundry & Machine Works

ANDERSON, INDIANA

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F. H. Robinson
Rodgers Engineering Co., L. E.
Standard Dry Kiln Co.

Castings.

Arbuckle & Co.
Chambers Bros. Co.
Fate-Root-Heath Co.
Frost Mfg. Co.
Hadfield-Penfield Steel Co.
Lancaster Iron Works.
Lee, Wm. E., & Co.
Manufacturers' Equipment Co.
Potts & Co., C. & A.
The Stevenson Co.
Toronto Foundry & Mach. Co.

Cements, Insulating.

Celite Products Co.

Ceramic Engineers.

Crossley Machine Co.
Lovejoy, Ellis.
Richardson, W. D.
Trautwein Dryer & Eng. Co.

Circuit Breaker.

Westinghouse Elec. & Mfg. Co.

Clay Crushers and Pulverizers.

Arbuckle & Co.
Brewer & Co., H.
Carnell, Geo.
Chambers Brick Machinery Co.
Crossley Machine Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Frost Mfg. Co.
Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co.
Phillips & McLaren Co.
Potts & Co., C. & A.
The Stevenson Co.
Wallace Mfg. Co.

Clay Dryers.

American Process Co.
Lancaster Iron Works.
Philadelphia Drying Mach. Co.

Clay Feeders and Mixers.

Arbuckle & Co.
Brewer & Co., H.
Carnell, Geo.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Lancaster Iron Works.
Manufacturers' Equipment Co.
Marion Mach., Fdy. & Sup. Co.
Potts & Co., C. & A.
F. H. Robinson
The Stevenson Co.

Clay Steamers.

Hadfield-Penfield Steel Co.
F. H. Robinson

Clay Technologists.

Bonnot Co., The
Ceramic Supply & Con. Co.
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
Lovejoy, Ellis.

Coal Unloader

Columbus Conveyor Co.
Galion Iron Works & Mfg. Co.

Coloring Materials.

Chattanooga Paint Co.
National Paint and Manganese Co.
Ricketson Mineral Paint Co.
Roessler-Hasslacher Chem. Co.
Williams & Co., C. K.

Consulting Engineers.

Lovejoy, Ellis.
Richardson, W. D.
Trautwein Dryer & Eng. Co.

Conveying Machinery.

Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Carnell, Geo.
Chambers Bros. Co.
Columbus Conveyor Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Lancaster Iron Works.
Manufacturers' Equipment Co.
Marinette Iron Works
Mathews Gravity Carrier Co.
Potts & Co., C. & A.
F. H. Robinson
Toronto Foundry & Mach. Co.

Continuous Kilns.

Amer. Dressler Tunnel Kilns
Ceramic Supply & Con. Co.
Didier March Co.
Hadfield-Penfield Steel Co.
Owens Cont. Tunnel Kiln Co., J. B.

Contracting Engineers.

Ceramic Supply & Con. Co.
Lovejoy, Ellis.
Manufacturers' Equipment Co.
Trautwein Dryer & Eng. Co.

Cutting Tables (Brick & Tile).

Arbuckle & Co.
Arnold Creager Co.
Bonnot Co., The
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co
F. H. Robinson
Steele & Sons, J. C.
Wallace Mfg. Co.

Cranes.

Ball Engine Co.

Crushers.

Gruendler Pat. Crusher & Pulv Co.

Cutting Wires.

Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co.
Mittler Wire Mfg. Co.
F. H. Robinson

Dies.

Arbuckle & Co.
F. H. Robinson
The Stevenson Co.
Toronto Foundry & Mach. Co

Disintegrators.

Anderson Fdy. & Mach. Works
Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Carnell, Geo.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate-Root-Heath Co.

(Continued on Page 488)

Westinghouse

ELECTRICAL EQUIPMENT FOR BRICK PLANTS

Taking into consideration interest on investment, cost of operation and maintenance, labor, etc., electric power is the most economical power for brick plants.

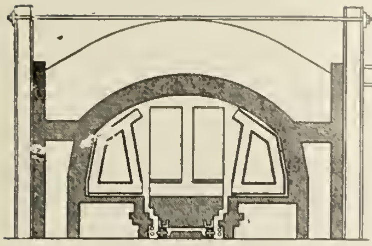
The difference of a few KW-hrs. of consumption of power very often means the difference between a profit or a loss.

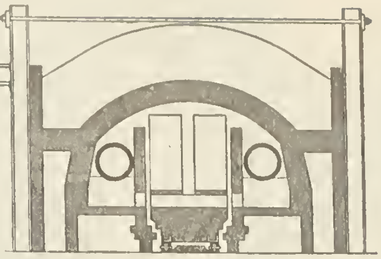
By installing Westinghouse equipment you will be assured of the most efficient apparatus, and with the cooperation of Westinghouse engineers who have had a broad experience in making electrical installations in brick plants, you are assured of apparatus that will give the best operating results in your plant.

100 H.P. CS Motor
Driving Dry Pans
Ferro Brick Co. Watsontown, Pa.

WESTINGHOUSE ELECTRIC & MFG. CO.
East Pittsburgh, Pa.

W WESTINGHOUSE ELECTRIC





THE KILN OF SURE CONTROL

AMERICAN
DRESSLER
TUNNEL KILN

The Greeks said:

"FIRE IS MAN'S GREATEST SERVANT and HIS WORST ENEMY"

IMPROPER FIRING COSTS YOU
Time, Labor and Wasted Material.

DRESSLER KILNS

Enable you to **control the fire!**

You secure absolute control—great fuel economy—and perfect ware.

**A Controlled Fire
Is Your Servant.**

Write for particulars to

AMERICAN DRESSLER TUNNEL KILNS, Inc.

1740 East Twelfth St. **CLEVELAND OHIO**

Buyers Ready Reference List—Continued.

Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Lancaster Iron Works.
Manufacturers' Equipment Co.
Potts & Co., C. & A.
F. H. Robinson
Wallace Mfg. Co.

Ditchers

Buckeye Traction Ditcher Co.

Draft Gauges.

Brown Instrument Co.
Ceramic Supply & Con. Co.
Engelhard, Charles
Thwing Instrument Co.

Drag Line Excavators.

Ball Engine Co.

Drain Tile Machinery.

(See Brick & Tile Machinery.)

Drums, Hoisting and Winding.

(See Supplies.)

Dryers.

American Process Co.
Brick & Clay Eng. Co.
Boss Co., John C.
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
Lancaster Iron Works
Manufacturers' Equipment Co.
Proctor & Schwartz
F. H. Robinson
Rodgers Engr. Co., The L. E.
Standard Dry Kiln Co., The
Trautwein Dryer & Eng. Co.
Webster, H., & Sons

Dryer Cars.

Arbuckle & Co.
Chambers Bros. Co.
Chase Fdy. & Mfg. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Lancaster Iron Works.
Philadelphia Drying Mach. Co.
Potts & Co., C. & A.
F. H. Robinson
Rodgers Engr. Co., The L. E.
Standard Dry Kiln Co., The
Steele & Sons, J. C.
Trautwein Dryer & Eng. Co.

Dry and Wet Pans.

Anderson Fdy. & Mach. Works
Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Chisholm, Boyd & White Co.
Eagle Iron Works
Fate-Root-Heath Co.
Freese & Co., E. M.
Frost Mfg. Co.
Hadfield-Penfield Steel Co.
Lancaster Iron Works
Manufacturers' Equipment Co.
Phillips & McLaren Co.
The Stevenson Co.

Dump and Clay Cars.

Arbuckle & Co.
Brewer & Co., H.
Chambers Bros. Co.
Chase Fdy. & Mfg. Co.
Eastern Brick Machinery Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Lancaster Iron Works
Manufacturers' Equipment Co.
Potts & Co., C. & A.
F. H. Robinson
Steele & Sons, J. C.

Electric Shovels.

Ball Engine Co.
Toledo Bridge & Crane Co.

Electrical Furnaces.

Brown Instrument Co., The

Electrical Locomotives.

Arbuckle & Co.
Westinghouse Elec. & Mfg. Co.

Electrical Supplies.

Hadfield-Penfield Steel Co.
Westinghouse Elec. & Mfg. Co.

Elevating Equipment.

(See Conveyors.)

Engines.

Arbuckle & Co.
Ball Engine Co.
Carnell, Geo.
Chambers Bros. Co.
Frost Mfg. Co.

Engineers.

Ceramic Supply & Con. Co.
Crossley Machine Co.
Hadfield-Penfield Steel Co.
Lovejoy, Ellis
Manufacturers' Equipment Co.
The Stevenson Co.

Excavating Machinery.

Ball Engine Co.

Fans.

Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co.
Rodgers Engr. Co., The L. E.

Feed Water Heaters.

Arbuckle & Co.
Frost Mfg. Co.
Hadfield-Penfield Steel Co.
Standard Dry Kiln Co.

Filter Presses.

Bonnot Co., The
Crossley Machine Co.
Hadfield-Penfield Steel Co.
Taplin-Rice-Clerkin Co.

Fire Brick and Fire Clay.

Parker-Russell M. & M. Co.

Flower Pot Machinery.

Baird Machinery & Mfg. Co.
Crossley Machine Co.

Friction Clutch Pulleys.

(See Supplies.)

Furnaces.

Brown Instrument Co., The
Lancaster Iron Works

Furnace Insulation.

Celite Products Co.

Gas Fire Continuous Kilns.

Manufacturers' Equipment Co.

Generators.

Westinghouse Elec. & Mfg. Co.

Grading Machinery.

Ball Engine Co.

Granulators.

Anderson Fdy. & Mach. Works.
Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Lancaster Iron Works
Manufacturers' Equipment Co.
Potts & Co., C. & A.
Steele & Son, J. C.
Wallace Mfg. Co.

Grates.

Arbuckle & Co.
Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co.
Marion Mach., Fdy. & Sup. Co.
Potts & Co., C. & A.

Gravity Carriers.

Mathews Gravity Carrier Co.

Gravity Haulage.

Hadfield-Penfield Steel Co.
The Stevenson Co.

Hand-Power Presses.

Carnell, Geo.
Crossley Machine Co.
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.

Heat Insulation.

Celite Products Co.

Hollow Brick Machinery.

Arbuckle & Co.
Bonnot Co., The
Brewer Co., H.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co.
F. H. Robinson
The Stevenson Co.
Wallace Mfg. Co.

Insulating Materials.

Celite Products Co.

Kilns.

Amer. Dressler Tunnel Kilns.
Brick & Clay Eng. Co.
Boss Co., John C.
Dennis, F. W.
Didier-March Co.
Flint River Brick Co.
Owens, Cont. Tunnel Kiln Co., J. B.
Richardson, W. D.
Rodgers Engineering Co., L. E.
Trautwein Dryer & Eng. Co.
Webster, H., & Sons

Kilns, Doors, Castings and Frames.

(See Supplies.)

Kiln Insulation.

Celite Products Co.

Knives.

(See Supplies.)

Locomotives.

Fate-Root-Heath Co.
Burton Engineering & Mach. Co.

Manganese.

National Paint and Manganese Co.

Mechanical Draft.

Boss, J. C.
Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co.
Trautwein Dryer & Eng. Co.

Mineral Paint.

(See Coloring Materials.)

Molds (Brick).

Carnell, Geo.
Eastern Brick Machinery Co.
Hadfield-Penfield Steel Co.
Potts & Co., C. & A.

Mold Sanders.

Carnell, Geo.
Eastern Brick Machinery Co.
Hadfield-Penfield Steel Co.
Lancaster Iron Works.
Potts & Co., C. & A.
Wallace Mfg. Co.

Motors.

Westinghouse Elec. & Mfg. Co.

Motor Trucks

Fate-Root-Heath Co.

Oil Burners.

Lancaster Iron Works.
Schurs Oil Burner Co.

Pallets.

Ohio Galvanizing & Mfg. Co.
F. H. Robinson

Pans (Dry and Wet).

(See Dry and Wet Pans.)

Paving Brick or Block.

(See Brick.)

Perforated Sheet Metal

Harrington & King Perf. Co.
F. H. Robinson

Portable Track.

Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co.
F. H. Robinson

Pottery Machinery.

Baird Machinery & Mfg. Co.
Crossley Machine Co.
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.

Power Plant Equipment.

Arbuckle & Co.
Hadfield-Penfield Steel Co.
Rodgers Engr. Co., The L. E.
Trautwein Dryer & Eng. Co.

Presses.

(See Brick Machines, also Sewer Pipe Machinery, also Roofing Tile Machinery.)

Pug Mills

Anderson Fdy. & Mach. Works.
Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Carnell, Geo.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Lancaster Iron Works
Manufacturers' Equipment Co.
Potts & Co., C. & A.
F. H. Robinson
Steele & Sons, J. C.
The Stevenson Co.
Toronto Foundry & Mach. Co.
Wallace Mfg. Co.

Pulverizers.

Arbuckle & Co.
Bonnot Co., The
Fate-Root-Heath Co.
Gruendler Pat. Crusher & Pulv. Co.
Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co.
The Stevenson Co.

Pyrometers.

Brown Instrument Co.
Engelhard, Charles
Rodgers Engr. Co., The L. E.
Thwing Instrument Co., The

Rails and Railway Equipment.

Ball Engine Co.
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
Richardson & Co.
Zelnicker Supply Co., W. A.

Rattlers (Paving Brick).

Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Phillips & McLaren Co.
F. H. Robinson

Represses.

American Clay Machinery Co.
Arbuckle & Co.
Bonnot Co., The
Carnell, Geo.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
F. H. Robinson

Revolution Indicators.

Brown Instrument Co.
Engelhard, Charles
Thwing Instrument Co.

(Continued on Page 490)

Driving Eight Wet and Dry Pans On One Shaft For Ten Years

THESE EIGHT belts driving wet pans on one side and dry pans on the other are all 18-in. x 8-ply Leviathans and were put on ten years ago. Since then not a single belt has had to be replaced and their present condition indicates that their record is not more than half made.

In addition to the dust and abrasive conditions, these belts, as every clayworker knows, must withstand terrific shock loads a great deal of the time.

It is usual to judge a belt solely by the length of service it gives, but the matter of daily efficiency deserves just as much consideration.

It seems almost needless to suggest that a belt that makes good on the hardest drives is bound to do more if possible on the easy ones.

We have prepared two booklets on belting—"Transmission Belts" and "Conveyor Belts"—that every brick and clay plant executive ought to read regardless of his present opinions on the subject. We will gladly mail either, or both, on request.

For every 1% a belt stretches after the first cut, the Main Belting Company will refund 3% of the purchase price. The first cut is excepted merely because it is generally recognized that it is more a matter of taking up slack than taking out stretch.

LEVIATHAN AND ANACONDA
GUARANTEED
AGAINST
STRETCH
BELTING

MAIN BELTING COMPANY
PHILADELPHIA

New York Chicago Pittsburgh Atlanta San Francisco

Buyers Ready Reference List—Continued.

Revolving Steam Shovels.

Ball Engine Co., The
Hadfield-Penfield Steel Co.

Road Graders.

Ball Engine Co., The

Rock Crushers.

Crossley Machine Co.
Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co.
Phillips & McLaren Co.
F. H. Robinson
The Stevenson Co.

Roofing Tile Machinery.

Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.

Rotary Dryers.

American Process Co.
Anderson Fdy. & Mach. Works
Bonnot Co., The
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
Lancaster Iron Works

Sand Dryer and Sand Sieves.

American Process Co.
Hadfield-Penfield Steel Co.
Lancaster Iron Works.

Sand Lime Brick Machinery.

Anderson Fdy. & Mach. Works
Ceramic Supply & Con. Co.
Chisholm, Boyd & White Co.
Hadfield-Penfield Steel Co.

School of Ceramics.

Illinois University.
Iowa State College.
New Jersey State School.
New York State School.
Ohio State University.

Scrapers, Plows and Clay Gatherers.

Eagle Iron Works

Screens.

Arbuckle & Co.
Brewer & Co., H.
Bonnot Co., The
Carnell, Geo.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Harrington & King Perf. Co.
Manufacturers' Equipment Co.
F. H. Robinson
The Stevenson Co.
W. S. Tyler Co.

Sewer Digging Machines.

Ball Engine Co.

Separators.

W. S. Tyler Co.

Sewer Pipe Machinery.

Brewer & Co., H.
Hadfield-Penfield Steel Co.
The Stevenson Co.
Toronto Foundry & Mach. Co.

Shale Planers.

Arbuckle & Co.

Stacks.

Lancaster Iron Works.

Steam Shovels.

Ball Engine Co.
Hadfield-Penfield Steel Co.

Steam Specialties.

Frost Mfg. Co.
Hadfield-Penfield Steel Co.
Standard Dry Kiln Co.
Trautwein Dryer & Eng. Co.

Steam Traps.

Frost Mfg. Co.
Hadfield-Penfield Steel Co.
Standard Dry Kiln Co.
Trautwein Dryer & Eng. Co.

Steel Pallets.

Ohio Galvanizing Co.
F. H. Robinson

Supplies.

Anderson Fdy. & Mach. Works
Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Caldwell & Sons, H. W.
Carnell, Geo.
Chambers Bros. Co.
Chase Fdy. & Mfg. Co.
Chicago Brick Machinery Co.
Chisholm, Boyd & White
Crossley Machine Co.
Eastern Brick Machinery Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Frost Mfg. Co.
Hadfield-Penfield Steel Co.
Lancaster Iron Works.
Manufacturers' Equipment Co.
Potts & Co., S. & A.
F. H. Robinson
Steele & Sons.
Toronto Foundry & Mach. Co.
Wallace Mfg. Co.

Switches.

F. H. Robinson

Tanks and Towers.

Lancaster Iron Works.

Tempering Wheels.

Carnell, Geo.

Testing Sieves and Shakers.

W. S. Tyler Co.

Thermometers.

Brown Instrument Co.
Engelhard, Charles
Rodgers Engr. Co., The L. E.
Thwing Instrument Co.
Trautwein Dryer & Eng. Co.

Tile Machines.

Anderson Fdy. & Mach. Works
Arbuckle & Co.
Arnold Creager Co.
Bonnot Co., The
Brewer & Co., H.
Crossley Machine Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co
Potts & Co., C. & A.
F. H. Robinson
The Stevenson Co.
Wallace Mfg. Co.

Time Recorder

Brown Instrument Co.
Engelhard, Charles
Thwing Instrument Co.

Tracks and Switches.

(See Rails.)

Transfer Cars and Turn Tables.

(See Supplies.)

Trench Machines.

Ball Engine Co.

Turn Tables.

Bonnot Co., The
Hadfield-Penfield Steel Co.
F. H. Robinson

Unloading Device for Pans.

Frost Mfg. Co.
Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co
The Stevenson Co.

Voltmeters.

Brown Instrument Co.
Engelhard, Charles.
Thwing Instrument Co.
Westinghouse Elec. & Mfg. Co.

Wattmeters.

Westinghouse Elec. & Mfg. Co.

Wheelbarrows.

(See Barrows.)

Wire Cloth.

W. S. Tyler Co.

Wet Pans.

(See Pans.)

This plate on your machinery means quality and production.

Let us quote on your requirements. Catalog on application.

BURNING CLAY WARES

Just off The Press

Limited Edition

The Most Valuable Book
In All Our Ceramic
Literature

Devoted:
To every angle of burning and kiln construction.

Details:
Every phase in burning processes for various clay products.

Describes:
Every kiln, giving Advantages and Disadvantages

Recommended:
By Leading Clay Product Manufacturers

Contains:
194 illustrations
336 pages of reading

Complete
Equalization and rectangles in equivalent circles tables

Price $5.00

Published by
T. A. Randall & Co., Inc.
211 Hudson St. Indianapolis, Ind.

BEST BOOK EVER PUBLISHED ON SUBJECT OF BURNING.

PAVE WITH BRICK

Be a Booster for Brick Streets and Brick Paved Highways
Get a Miniature Pave With Brick Sign. T.A.Randall & Co., Indianapolis, Ind.

MEDAL
Repressed and Wire Cut Lug Paving Brick
The block with experience and service behind it.
THE MEDAL PAVING BRICK CO.
Cleveland, Ohio

PAVING BUILDING • **BRICK AND BLOCK** • SIDEWALK FOUNDATION
The Barr Clay Co.
C. C. BARR, Pres., Streator, Ill.

OXBLOOD RED FRONT BRICKS
DEVONSHIRES and REPRESSED
KUSHEQUA
Highly Vitrified by Natural Gas.
Tough Paving Blocks, Beautiful in Color and Finish.
KUSHEQUA BRICK CO., Kushequa, Pa.

PROMENADE TILE
Chocolate Red
Highest Vitrification—Lowest Absorption.
BEST BY TEST.
KUSHEQUA KERAMIC COMPANY,
Kushequa, Pa.

FIRE BRICK
DOVER FIRE BRICK CO.
Incorporated 1870
Manufacturers of North Bend, Dover and Buckeye Brands.
GROUND FIRE CLAY
Unexcelled for Kiln Purposes
509 Cuyahoga Bldg. CLEVELAND. OHIO

VITRIFIED PAVING BRICK
A valuable treatise on the manufacture and use of Paving Brick up to date. By H. A. Wheeler, E. M. Second edition.
Mailed to any address on receipt of $2.00.
T. A. Randall & Co. (Inc.) Publishers
Indianapolis

ALTON BRICK COMPANY
Makers of High Quality Brick for
Roadways and Permanent Buildings.
Repressed and Wire-Cut-Lug Block.
ALTON, ILLINOIS

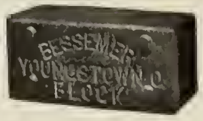
The Danville Brick Company
Manufacturers of the Unsurpassed
Danville Paving Block
Danville, Ill.
LET US QUOTE YOU PRICES.

McAVOY VITRIFIED BRICK COMPANY
PHILADELPHIA, PA.
"McAVOY BLOCK"

COMMON
Hard Burned Shale
BUILDING BRICK
Large Capacity
Prompt Shipment
The Burton-Townsend Co.
Zanesville, Ohio
ZANESVILLE—Plants—ASHTABULA

Best Paving Brick Made

DAILY CAPACITY 1,000,000 BRICK



The Metropolitan Paving Brick Co.
CANTON, OHIO

SERVICE FIRST!
IRONSTONE BLOCK
OFTEN RATTLED BUT NEVER EMBARRASSED
A BLOCK OF THE IRONSTONE QUALITY IS ECONOMY
REPRESSED OR DUNN WIRE-CUT-LUG
Terre Haute Vitrified Brick Co.
TERRE HAUTE, IND.

Murphysboro Paving Brick Company
Manufacturers of
The Celebrated
EGYPTIAN PAVING BLOCK
The Block That Stands the Test.
Prices and samples furnished upon application.
MURPHYSBORO, ILL.

C. P. MAYER BRICK CO.
BRIDGEVILLE, PA.

The Mayer Block is guaranteed to be free from lamination, and equal to the best.

PURINGTON PAVERS
ARE MADE OF
GALESBURG SHALE
PURINGTON PAVING BRICK CO.
GALESBURG, ILL.

Have You Something To Sell ?

PLACE A SMALL AD IN THE CLAY-WORKER.

You will be surprised how quickly you will make the sale or the purchase.

It Costs But 35 Cents The Line
See Page 556.

Are You In The Market For Second Hand Machinery Or Equipment

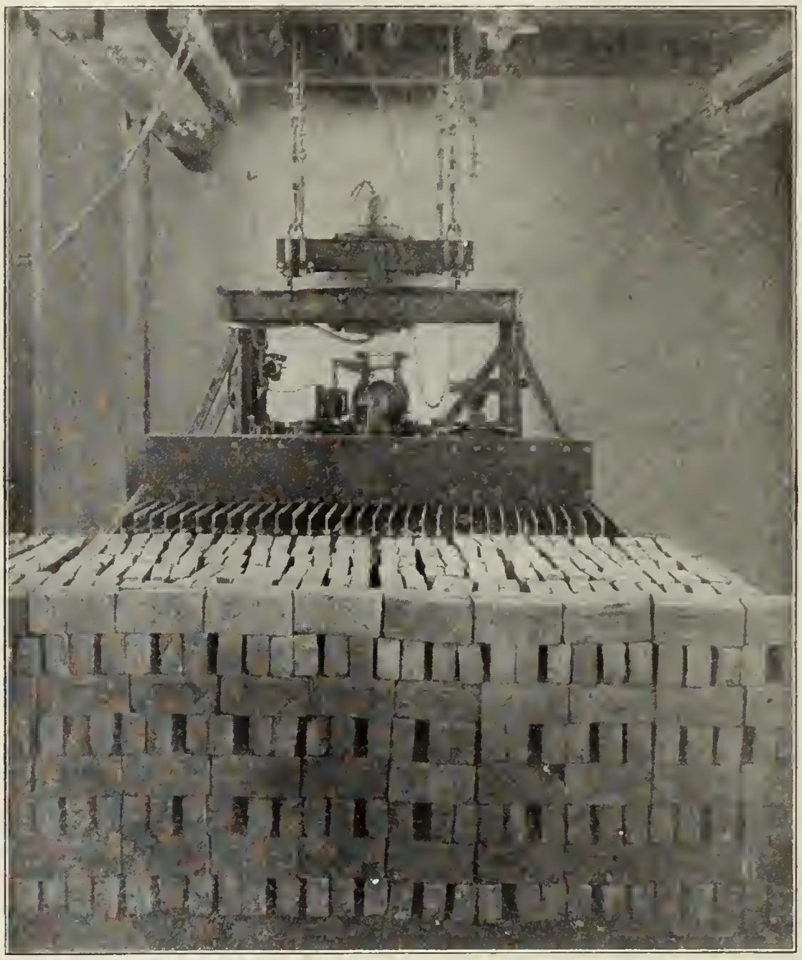
Labor-Saving Devices Must be Used to Solve the Labor Shortage. You Can Save Labor With

THE DICKINSON BRICK SETTING MACHINE

The need of labor-saving devices has always been recognized by manufacturers in the clay industry. It has been especially difficult to obtain labor for setting brick; first, because of the skill required in setting; second, because of the physical strain and endurance required, and, third, because of the dirt and unpleasantness of the work. This difficulty has been gradually increased until in the present strenuous times it is actually becoming impossible to get men to do this work.

Knowing the defects of the setting machines now on the market, the inventor, in building this machine, corrected these weak points. He also recognized the need of a more flexible machine for use in the various processes of manufacturing brick, instead of confining the machine to the stiff mud process alone; in other words, a machine that would not require the brick to be perfectly dried.

This machine has been perfected and will set any brick that are dry enough to stand up as they pass through the dryer. He also recognized the need of a machine requiring a minimum amount of adjusting. This machine requires a minimum amount of adjusting. This machine requires no tension adjustment, as the brick are not gripped, but lifted from the bottom.



This photograph shows the brick set on the kiln bottom as they are set in the starting of a scoved or clamp kiln, with a front view of the setting machine raised to a height sufficient to show the finger construction. It also shows a general view of the machine suspended from the crane.

The many
merits of this
machine can
not be told in
a single page
Let us send
you detailed
information.

THE DICKINSON BRICK SETTING MACHINE

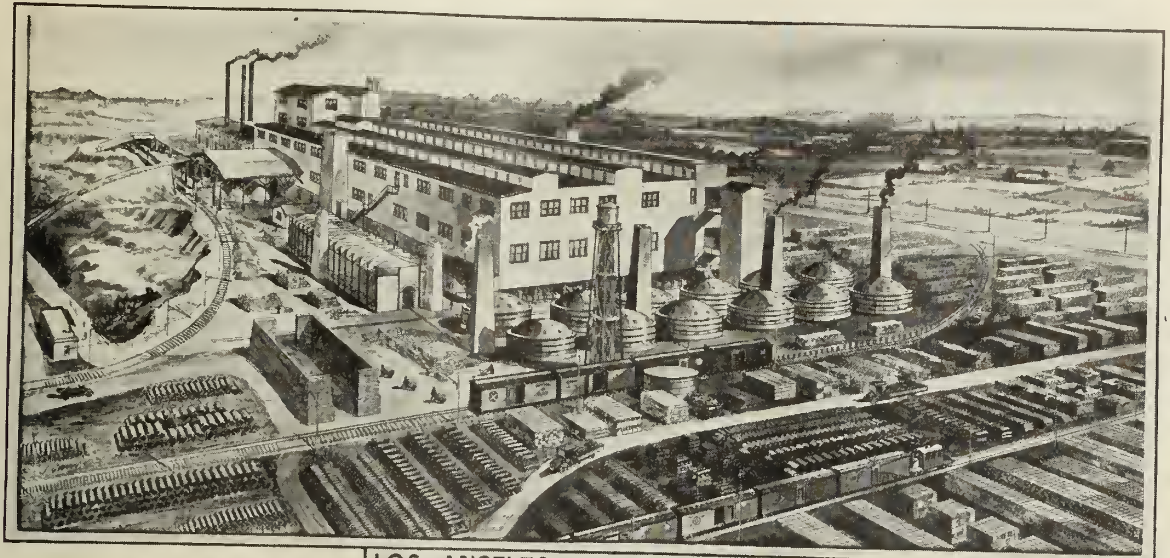
W. W. Dickinson, Jr.
1612 Battery St., Little Rock, Ark.

This machine is fully protected by patents and by additional patents pending.

The Manufacture of Building Tile

With the Aid of

Chambers Brothers Co.'s Machinery



LOS ANGELES PRESSED BRICK CO.
— PLANT No 2 —
SANTA MONICA, CAL.

Those who recall the conventional brickyard of fifty years ago will be interested to view the illustration of a modern clayworking factory, and we take pleasure in devoting some portion of our advertising space to the fine view of the Santa Monica plant of the Los Angeles Pressed Brick Company.

Its a long haul from Philadelphia to Los Angeles, but after using a Chambers No. 5 Reel Cutter on his Alberhill plant for several years, Mr. Frost has ordered a duplicate cutter for Plant No. 2 at Santa Monica.

The great flexibility of No. 5 Cutter is an important factor and adds to its value for many manufacturers.

MADE AT PHILADELPHIA, PA.

"The World's Workshop"

CHAMBERS BROTHERS CO.

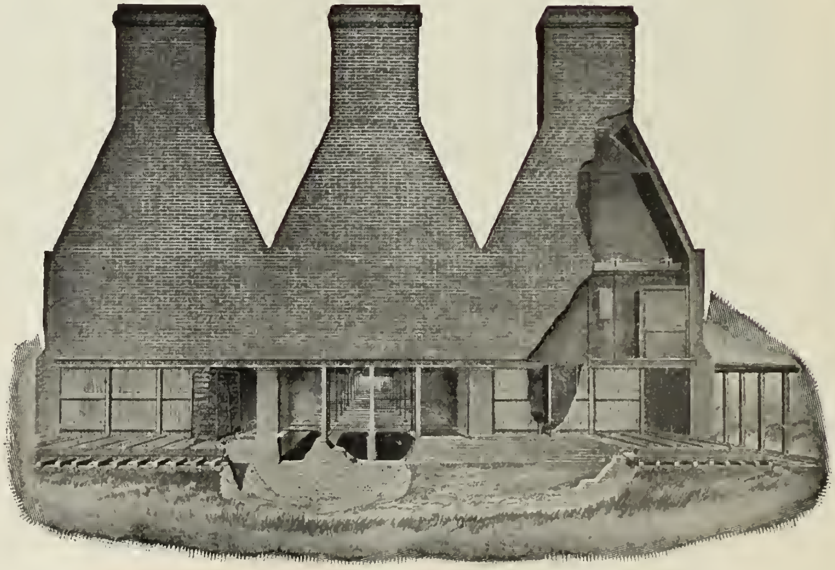
For all of us
Living in the U.S.A.

this holiday season, there are scores of reasons for wishing each other a

Merry Xmas

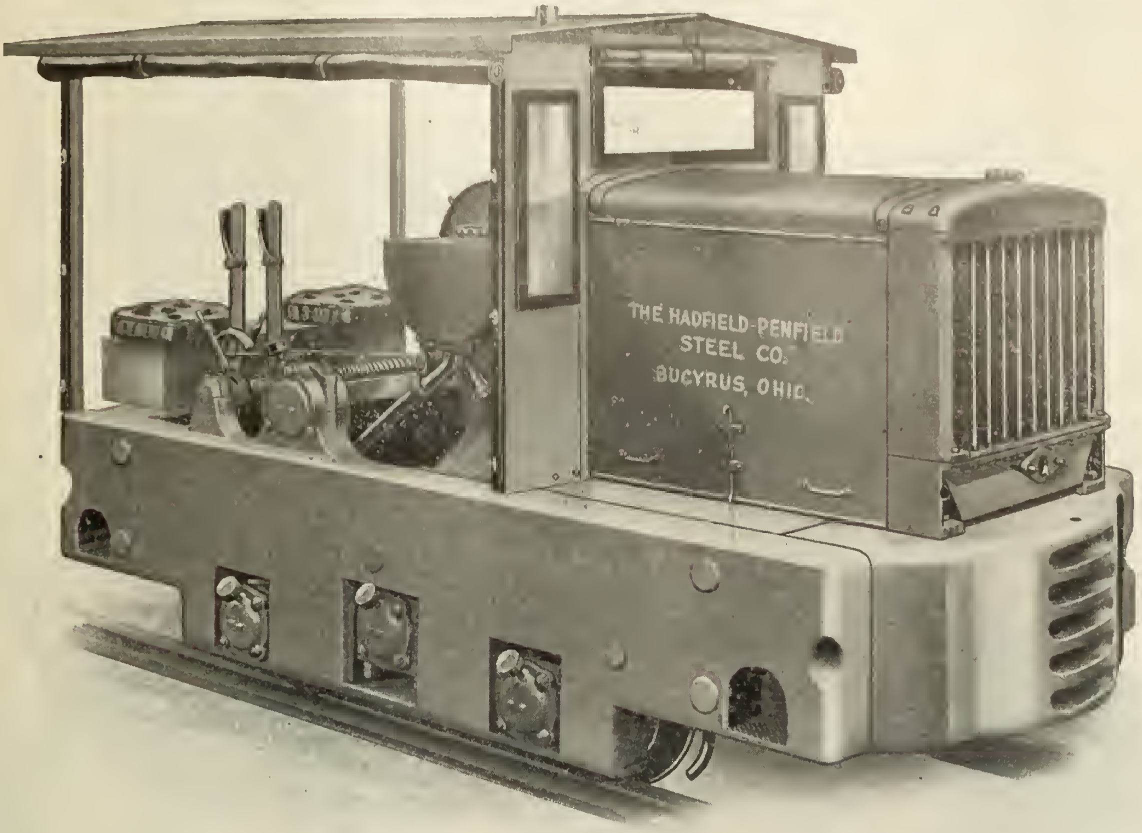
and there are reasons more vital even than the fact that this has been a splendid business year. To our many appreciated friends we send our greetings with the hope that the future also will be as satisfactory.

THE STANDARD
DRY KILN CO.
1547 McCarty Street, Indianapolis, Ind.



More than one generation has used and re-orderd

The Standard
Steam Brick Drier



American Gasoline Locomotive.

The American Gas-O-Motive.

Good in the "Long Run". Fine on the "Short Pull".

The American Gas-O-Motive speeds up the equipment and the organization.

Built strong it is impervious to hard usage of clay plants. It stands up under unfair punishment.

It is always on the main track, never on the siding or repair track for tampering or tinkering.

Designed simply it is safe in the hands of even an incompetent.

Being quick in action it is here, there and everywhere, doing the work of two ordinary locomotives.

Ample stress factors keep it at work. Continuous service invited.

It is Friction drive. Hercules Motor

Efficient Cooling system. Telescopic coupling. Aligning axle. Drive chains run in oil. Positive sander, 4 wheels.

Direct vision ahead. Parts accessible,

The American Gas-O-Motive represents an investment costing you 50 cents a day!

It would be worth many times that amount to you.

Built in several sizes.

Get specifications, price and delivery.

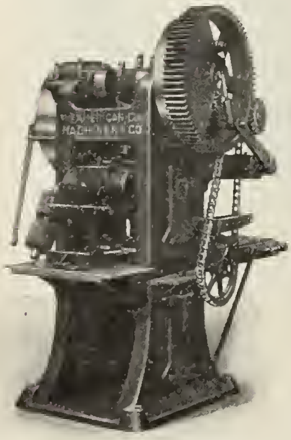
The Hadfield-Penfield Steel Co. Formerly The American Clay Machinery Co.

Bucyrus, Ohio.

George G. Stein
Mgr. Gasoline Locomotive Sales Dept.
404 Hippodrome Bldg., Cleveland, Ohio.

American No. 281 Auger Machine

"The Line to Make the Brick Man Famous"

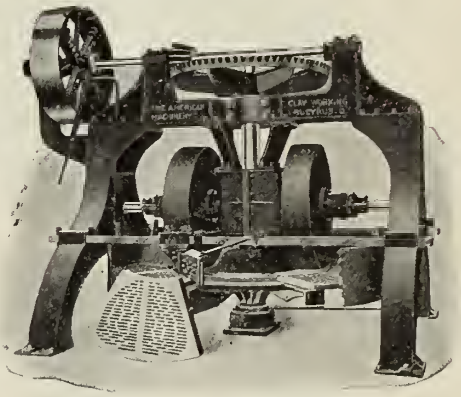


American No. 292 Press

Here is a line of Quality Clay Working Machinery. It is "Built Right" and will "Run Right".

The No. 281 Auger Machine
The No. 292 Repress
The Nine Foot Pan
The No. 304 Pug Mill

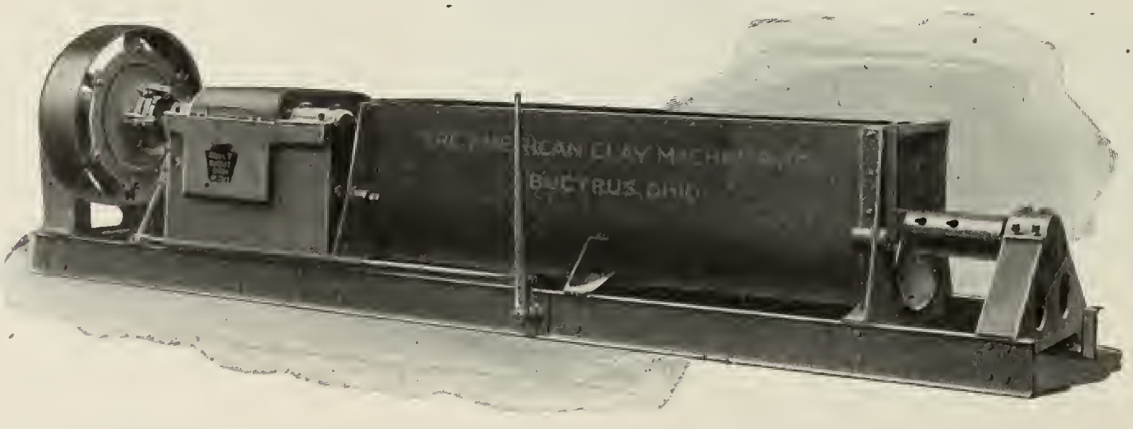
If there is a better machine than any of these we dont know it. They are built to be satisfactory and they are.



American Nine Foot Pan.

We build every machine and appliance required in all branches of the Clay Trade and invite correspondence.

The Hadfield-Penfield Steel Co., Bucyrus, Ohio
Formerly The American Clay Machinery Co.



American No. 304 Pug Mill

A Letter Worth Advertising

Let's Go!

MERRY CHRISTMAS

"We all knew this adjustment had to come sometime, so why feel blue and discouraged? We have been through the same thing before, and we will live through this adjustment period also.

BANKS. We have a banking system which is holding up in fine shape, and we will have no money panic. Consider what would have happened in the last few months without the Federal Reserve System.

GOLD. We have about half the known supply of gold in our bank vaults. Compare this with the situation before the war, and the present situation of the European countries.

CREDIT. Every nation on the earth owes us money! Think of the billions of dollars in stocks and bonds held abroad before the war, on which we were obliged to pay dividends and interest. These stocks and bonds are now in America's strong boxes.

MONEY. Our dollar is the only unit of currency in the world commanding a premium in every market, and this situation will continue for years.

EXPORTS. Our exports exceed our imports by a wide margin, and will do so for a long period. We have the coal which every country must buy from us. England has not the tonnage to keep up her pre-war exports. Our only limit is the mechanical means of dumping the cars into ocean ships. And we have the ships! A few of them may leak, perhaps, but we have the yards in which to build others and repair the ones we own. And our flag flies in many ports where it has not been seen for years. We have the wheat, the cotton, the copper, the raw materials, and the world must buy of us or do without.

RAILROADS. Our railroads have been given living rates. They need everything from tacks to locomotives, and we own the factories which can supply them.

BUILDING. Every village and city in our land is seven years behind in their building program. They require everything from chicken coops to office buildings, and these wants must be supplied.

AUTOMOBILES. The automobile and tire business is weak in the knees at present. But it will recover. Autos are still in daily use, and the middle of any city street is as unsafe a gossiping place as it was six months ago. We will continue to drive cars of high and low degree, and remember, that every time the wheels revolve the automobile and its tires are that much nearer the junk heap.

ROADS. Road-building projects on a large scale are being planned all over the country, and will be put through.

FOREIGN EXCHANGE. If our foreign friends refuse to buy our goods or cannot do so because of the exchange situation, remember, we are years behind in everything in our own country, and we could live on our own fat for five years and put our own house in order, and get acquainted with each other again, and be all the better for it.

PRICES. Prices are being adjusted in every direction, and many of them are already dragging bottom. When you hit bottom you always come up; perhaps a little disfigured, but anyway, you come up.

SALESMANSHIP. Real salesmanship, has come into fashion again. The day of the "order taker" is over, so get your feet out of the office; stop talking hard times; hot-foot it up the streets and down the alleys and byways, hustling for business, and you will find many concerns using your line of material, of whose very existence you have been unaware. Keep your tail off the ground or it will be stepped on by some hustling salesman on the way to secure an order from one of your own customers.

GO TO IT! We have the money, the credit, the factories, the labor, the materials, the brains, the initiative, and we are naturally optimistic. Pessimism is a disease and follows poor circulation. Exercise is the best cure for it. Go out after the orders. Put jazz, pep, ginger into your efforts. Burn the crepe and jump on the crepe hangers with both feet. Wear out the shoe leather. You will probably get some business, and anyway it will help the shoe business. Forget the last five years, and keep your eye on the next five, and DIG FOR BUSINESS. IF YOU DON'T, SOMEONE ELSE WILL GET IT."

HAPPY NEW YEAR

(Reproduction letter from National Sales and Trading Company, Cleveland, Ohio.)

BRICK MACHINERY

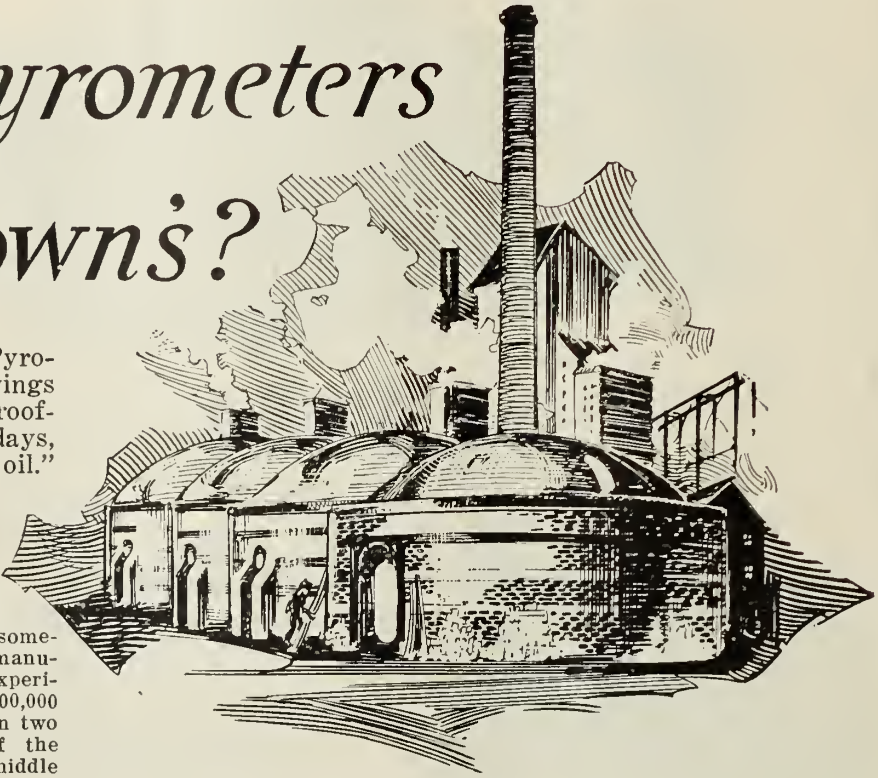
Successors to
The Arnold-Creager
Co., New London, O.
Originated 1887.

Lancaster Iron Works, Inc.

Brick Machinery Dept.
James P. Martin, Manager
LANCASTER, PENNSYLVANIA

Manufacturers of
"Martin" Brick
Machinery.
Originated 1858.

Why do 80% of all Brick Plants Using Pyrometers Use Brown's?



BECAUSE daily Brown Pyrometers are making such savings as "shortening the burn of roofing tile from six to four days, with a saving of 14% fuel oil." Accomplished at the Los Angeles Pressed Brick Co., Los Angeles, Calif.

BECAUSE Brown Pyrometers permitted a continuous kiln being started and raised to a temperature of 1800° F. in five days, something never before done by this manufacturer in his thirty years of experience; as well as finishing 300,000 bricks, all at a good even burn in two weeks accomplished at one of the largest brick plants in the middle west (name on request).

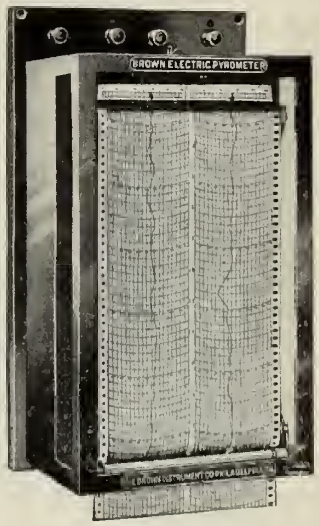
Let us send you the name of some of these Brown users in your immediate vicinity. Possibly some will be friends of yours and you can get an unbiased opinion of what Brown Pyrometers will save you, in brick burning. We do not want to sell you a Pyrometer Equipment. We want to lay all the cards on the table and then ask you to sell yourself. That's fair enough, isn't it?

Fill out and mail coupon today. We will send you the most comprehensive catalog published on Pyrometry, including photographs of actual Pyrometer installations in brick plants.

The Brown Instrument Company, 4505 Wayne Ave., Philadelphia, District Offices at New York, Pittsburgh, Detroit, Chicago, St. Louis, Denver, San Francisco, Los Angeles or Montreal.

Brown Pyrometers

Made in The World's Largest Pyrometer Workshop



This Brown Duplex Recording Pyrometer produces two records on one chart, for instant comparison. It is fitted with an eight-day clock and a two-month record roll and carbon. No inking device is required.

**The
Brown
Instrument
Company
4505 Wayne Ave.
Philadelphia, Pa.**

Kindly send me complete data on Economy of Pyrometers relative to brick burning.

No. of Kilns ________ Type of Kilns ______
Name ______________________________
Company ____________________________
Address ____________________________
City and State ________________________
1—1

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ORIGINAL Boss SYSTEM

Boss Ten-Hour Dryer

Will dry your daily output in TEN HOURS with either WASTE HEAT or EXHAUST STEAM.
Less cost to build—Less cost to operate.

Boss System of Burning

Brick or hollow ware burned in ONE-HALF LESS TIME and ONE-HALF LESS FUEL. Increases your kiln capacity. Dryers and kilns designed and built. Let us solve your drying and burning problems.

J. C. Boss Engineering Co.
Elkhart, Indiana

YOU HAVE KNOWN FOR YEARS THAT

RICKETSON'S MORTAR COLORS

are pure and brilliant in tone, economical in application, absolutely reliable, and a permanent guarantee against fading and washing.

Why Not Insist on Having Them?

They are the acknowledged best for all uses---Mortar, Brick, Cement, Concrete and Stone.

Red, Brown, Buff, Purple and Black.

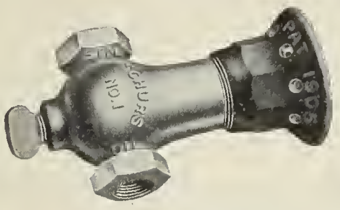
RICKETSON MINERAL PAINT WORKS
MILWAUKEE, WIS.

CARS CASTINGS DIES

In our Foundries and Machine Shops we are prepared to furnish Dryer Cars, Clayworkers' castings and Dies of all kinds for sewer pipe press and machines, Etc. Write for Prices

Wm. E. Dee Co. 30 N. LaSalle St.
Chicago, Ill.

Over 60,000 In Use
Oil Burners For All Types of Kilns



Perfected to
The Minute
HEAT TELLS!
Write us today

"Be Sure It's Schurs"

SCHURS OIL BURNER CO.
Established 1905
Los Angeles, Cal., U. S. A.

Classified Advertisements

FOR SALE, WANTED, ETC.

Advertising rates in this column 35 cents a line, or 6 cents a word each insertion; about six words make a line. Cash should accompany the advertisement to insure Insertion. No ad inserted for less than $1.00.

WANTED, ETC.

WANTED

A young man with experience as assistant manager of a Terra Cotta Sewer Pipe Plant.
TERRA COTTA,
11 3 d Care Clay-Worker.

WANTED

Two thousand steel pallets 11 or 12 inches by 14 inches for hollow tile use.
ALABAMA CLAY PRODUCTS CO.,
12 1 c Birmingham, Ala.

WANTED

Position as superintendent by a practical and experienced man. Tile or brick plant. Also an A-1 burner. Best of references. Address "MAN,"
12 1 d Care Clay-Worker.

WANTED

A used clay crusher to make 50 thousand brick per day. State make, type, power required, condition, weight, shipping point and price. Address
CRUSHER,
10 tf d Care ClayWorker.

WANTED.

To buy a few hundred steel decks 3 x 7 feet for drier cars. Please give complete description as to condition and lowest cash price.
COLUMBIA CLAY COMPANY,
9 4 d Urichsville, Ohio.

WANTED

Experienced salesman to travel Wisconsin territory by a large Chicago concern to handle Sewer Pipe, Fire Brick, Hollow Building Brick, Flue Lining and Wall Coping. State experience, age, references, etc. Address
SALESMAN,
12 1 d Care Clay-Worker.

WANTED

An A-1 fire brick man, who thoroughly understands the business and has good business ability, to take a position as general manager of a fire brick plant of well-known reputation; must make his residence in the State of Ohio. State experience, age, references and salary expected. Address ABILITY,
11 2 d Care Clay-Worker.

WANTED.

Contractor with steam shovel or drag line to strip over-burden in clay pit. Address
PIT,
11 2 d Care Clay-Worker.

WANTED.

Used steam or electric shovel, one-half yard to one yard capacity. What have you? Address SHOVEL,
11 2 d Care Clay-Worker.

WANTED

Larger opportunities with hollow tile or face brick plant. Now assistant to manager of hollow block plant. West or middle west preferred. Address,
HOLLOW BLOCK,
Care Clay-Worker.

FOR SALE

FOR SALE

American self-feeder in first class condition, by HARMON LEOW & CO.,
11 tf d Oak Harbor, O.

FOR SALE

Twelve single deck dryer cars. If sold at once, will go at a bargain. Address,
INDIANA,
11 tf d care Clay-Worker.

FOR SALE

Two 2-horse power iron Quaker Brick Machines, Moulds and Trucks. Address
W. E. MULBY,
115 Second Ave.,
12 3 c Columbus, Ohio.

FOR SALE

Slightly used No. 5 Good Roads Machinery Company Jaw Crusher with 11 by 26 inch opening. This is a bargain. Address "JAW CRUSHER,"
12 1 d Care Clay-Worker.

BRICK MACHINERY FOR SALE.

One Arnold-Creager Automatic, and two SSS; two C. & A. Potts machines; two mould sanders; one heavy duty pug mill, new; disintegrators; 6,000 galvanized pallets 10-in. x 34-in. rolled edges and ends; 40,000 A-1 white pine pallets 10-in. x 34-in. x ½-in.; 200 rack dryer cars, roller bearings; American rotary dryer; tailing crusher; dry pan; dry presses; screens; Buckeye clay digger; dryer fan and engine direct connected; steam shovels; steam engines 20 h. p. up; one 500 h. p. Corliss; fully equipped brick yards. Write me for price on brick moulds, brick barrows, trucks, etc.
FRANK McCLELLAN,
14624 Ardenall Ave.,
12 1 c East Cleveland, Ohio.

FOR SALE.

Ten thousand Cypress brick and tile pallets, size 9 x 24 inches.
HIGGINS,
11 2 c Care Clay-Worker.

FIRE BRICK EQUIPMENT.

One American 6-mold dry press, with extra molds for split and checker brick, one extra mold for common brick.
One American 4-mold dry press, with extra molds for Nos. 1, 2, 3, 4, and 5 cupola block, Nos. 1, 2 and 3 Arch brick, Nos. 1, 2 and 3 Wedge brick, also standard soap brick.
One 9-ft. wet pan with mechanical unloader, motor driven.
One 9-ft. dry pan, extra set bottom plates, motor driven.
150 dryer cars, double deck, 24" gauge.
One Plymouth gasoline locomotive, 24" gauge.
Two exhaust fans No. 180, right and left
One exhaust fan No. 140, right hand drive.
Two agitating clay mixers.
Transfer cars, belting, shafting, motors, etc.
Two rocker dump clay cars, 24" gauge.
Two bottom dump clay cars, 24" gauge.
Complete Equipment for Firebrick plant.
510 Union Bank Building,
11 2d Scranton, Penna.

FOR SALE
NEW, NEVER USED CLAY WORKING MACHINERY:

106 Dryer Cars. 76 Pairs End Uprights for Dryer Cars. 33 16-lb. Rails for Cross Ties for Dryers. 4,924 lin. ft. 12-lb. Rails with Fish Plates and Bolts. 2,340 Pairs Rail Clamps and Bolts. Two Single Transfer Cars. Eight 6-ft. Gas Producers. One Bensing large size Hollow-ware Cutter. One 14-in. x 34-ft. Off Carrier Belt for Bensing Cutter. One Automatic Clay Feeder 4-ft.-0-in. Diameter. Two 12-in. x 6-in. x 45-ft.-0-in. Cup Elevators. One No. 2 Piano Wire Screen 24-in. x 60-ft. One Waste Clay Elevator 12-in. x 15-ft. One Waste Clay Conveyor 12-in. x 60-ft. One 14-ft.-0-in. Heavy Duty Pug Mill. One large size Hollow-ware and Brick Machine. Two 4-ft. x 7-ft. Fans. All the iron work and the license to use and operate one 42 section tunnel type gas fired continuous Kiln of the back to back variety (built enbloc). Each section being 20-ft. wide x 11-ft. high x 18-ft. long.
THE O. C. BARBER ALLIED IND. CO.,
308 Vicary Building,
12 1 cm Canton, Ohio.

Classified Advertisements.

FOR SALE ETC.

OPERATING BRICK YARD FOR SALE

At Glascoe, On-the-Hudson, six miles from Kingston, 96 miles New York City, west bank of the river.

The plant has been established over 25 years. To settle an estate, it is now put on the market. Equipment, 3 machines, 175 H. P. Corliss Engine and boilers, all in good working order. New sheds; Capacity 6,000,000 brick. In yard now 2,500,000 brick; sold with property if desired at price to be agreed upon.

Clay bank 70 acres in area (area of farm 84 acres) 80-100 feet in depth; practically inexhaustible. On the farm good house, new barn, orchards—value as farming property at least $8,000.

Workmen employed the past summer 40. Could be augmented.

Terms for the entire plant as it now stands, including farm, but exclusive of personal property such as six horses, fifty tons of hay, etc., $40,000; cash $16,000. Mortgages, if wanted from the estate, $24,000 at 6 percent.

Address all inquiries,
Poughkeepsie Chamber of Commerce.
Poughkeepsie, N. Y.

For 64 pages of unusually good bargains in

New **RAILS** Relay

Cars, Locomotives, etc., and Railway and Industrial Equipment of every kind.

Write for our latest Big Bulletin.

ZELNICKER IN ST. LOUIS

"RICHARDSON" for RAILS

Constant stocks of New and Relaying Rails, Spikes and Bolts. Frogs and Switches. Tell us your requirements.

RICHARDSON & CO., Inc.
2101 Oliver Building,
Pittsburgh, Pa.

WANTED

Good second-hand bevel driven heavy duty pug mill. Either ton or twelve-foot long. Give full description and price where located, in answering.

A. FRIES & SONS,
12 tf d Connersville, Ind.

WANTED DINKEY LOCOMOTIVES

Will purchase several seven to fourteen ton engines in any condition which will justify our rebuilding and repairing same. VULCAN and DAVENPORT preferred.

The Pittsburg Boiler & Engine Co.
Pittsburg, Kan.
6 tf d

Only One of Many
Such Letters Received

KOPP KLAY KOMPANY

Manufacturers and Distributors

CLAY PRODUCTS

Greenford, Ohio

The Clay-Worker,
Care T. A. Randall & Co.
Indianapolis, Ind.

Gentlemen: Until further advised please cancel our ad "OPPORTUNITY," in your paper.

The results obtained from this ad were very satisfactory and we wish to thank you for them.

Yours very truly,
Lewis Kopp, President.

If you have anything to sell or if you wish to buy some second-hand machinery a classified ad in The Clay-Worker will bring immediate results.

Brick manufacturers who have anything in the way of second-hand machinery or appliances, will find a ready market for same through a card in our Classified Advertisements. Superintendents, yard foremen, burners, etc., desiring to make a change, will do well to run a Wanted ad in our classified department. Clay-Worker ads bring results.

Anchor Brand Colors

For Mortar Cement and Brick.

BROWN, BLACK, RED AND BUFF.

Strongest and Most Durable.

Manufactured by

C. K. WILLIAMS & CO.

EASTON, PA., U. S. A.

Correspondence solicited.

Chattanooga Paint Co.,

Chattanooga, Tenn.

Manufacturers of

Red Oxides for Brickmakers' Use.

ECLIPSE MORTAR COLORS,

Red, Brown, Buff, Black.

MANGANESE

BEST QUALITY MANGANESE, CAREFULLY AND UNIFORMLY PREPARED FOR BRICKMAKING. WRITE US FOR SAMPLES AND PRICES.

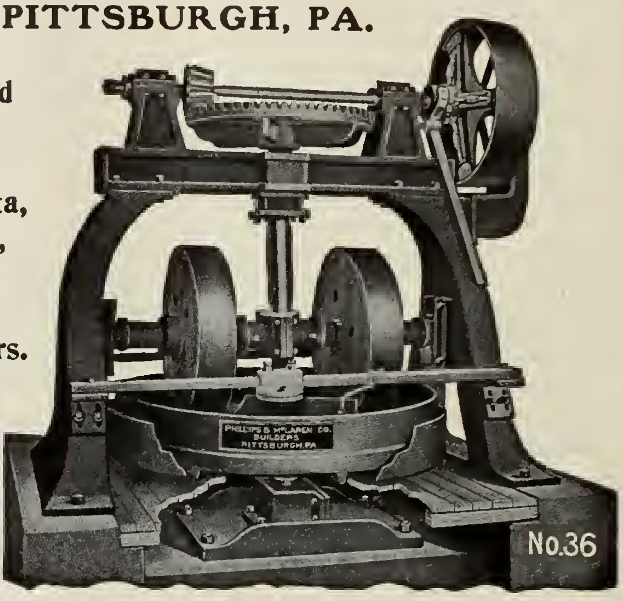
NATIONAL PAINT AND MANGANESE CO.
LYNCHBURG, VA.

MINERS AND GRINDERS.

PHILLIPS & McLAREN CO

PITTSBURGH, PA.

Builders of
Pittsburgh Standard
Dry and Wet
Grinding Pans
for Brick, Terra Cotta,
Sand, Cement, Ore,
Refractories, etc.
Also
Rock and Ore Crushers.



When writing for prices state kind of Clay or Material to be ground and capacity desired.

Eastern Sales Office
Stephen Girard Bldg.
Philadelphia, Pa.

R H C C

Authorities recommend; Builders and Owners Desire

SCUM PROOF PRODUCTS

These can be procured by the use of

R & H PRECIPITATED

CARBONATE BARYTES

The Roessler & Hasslacher Chemical Co.

New York, N. Y.

"America's Leading Ceramic Material House."

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Niagara Falls, N. Y.
St. Albans, W. Va.
Los Angeles, Cal.

OAK HILL
GAS RETORT
AND
FIRE BRICK
WORKS

The Parker-Russell
Mining and Manufacturing Co.
ST. LOUIS, U. S. A.

Fire Clay and Silica Products of Quality for Service---
Especially for Kiln Construction.

BOOKS FOR BRICKMAKERS.

ECONOMIES IN BRICKYARD CONSTRUCTION AND OPERATION
By Ellis Lovejoy, E. M., Price $1.00.

EFFECT OF HEAT UPON CLAYS,
By Prof. A. V. Bleininger, Price $2.00

DRYING OF CLAYWARES,
By Ellis Lovejoy, E. M., Price $2.00.

SCUMMING AND EFFLORESCENCE,
By Ellis Lovejoy, E. M., Price .50c.

MODERN BRICKMAKING,
By Alfred B. Searle, Price $7.00.

Burning Clay Ware By Ellis Lovejey, E. M. Price $5.00

T. A. RANDALL & CO., Publishers, Indianapolis.

If...
You Want
to Sell
or Buy...
Second-hand Clayworking Machinery, Tile Mills, or anything pertaining thereto.

If...
You
Want a Man
for any position or a position in any connection with the Clayworking Trades use the

For Sale
and Want
Columns
of...
The...
Clay-Worker

RATES

For all transient advertisements, such as "For Sale," "Wanted," etc., the rate is 35 cents a line per insertion. Average of seven words to line.

The Best, Quickest, Cheapest Method of Securing Results.

"We are certainly pleased with the operation of your equipment, and consider ourselves very unwise in not having procured this equipment for our three original installation."

(Signed) THE WINDSOR BRICK CO.

ENGELHARD PYROMETERS

More and more are brick plants turning to Engelhard Pyrometers as the solution of their Pyrometer problem. Here are three reasons why:

ACCURACY: There is too much money tied up in a kiln to take chances with a wrong reading instrument.

DURABILITY: Industrial use means hard service—some Pyrometer builders never seem to think of that.

DEPENDABILITY: When you come in, in the morning, you want to know what the night man was doing.

ENGELHARD PYROMETERS ARE GOOD PYROMETERS TO STANDARDIZE ON.

CHARLES ENGELHARD

30 Church Street **NEW YORK CITY N. Y.**

Excess temperatures waste fuel and spoil product

THWING

HIGH RESISTANCE MULTIPLE RECORD

PYROMETERS

tell you accurately just when the proper temperatures have been reached. They help you save fuel, improve product and reduce costs. Write for full information. 91

Thwing Instrument Company
Lancaster Ave. and Cuthbert St. Philadelphia, Pa.

MAKE BELT JOINTS THAT H-O-L-D

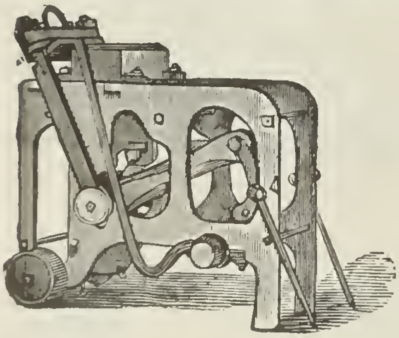
Crescent Belt Fasteners make a joint that lasts as long as the belt itself. The Crescent plate and Crescent rivets take a won't-let-go grip on the belt that long, hard and continuous service cannot loosen.
Write for new Booklet R on Increasing Efficiency and for demonstration sample.

CRESCENT BELT FASTENER CO.,
381 Fourth Ave., New York.
Canadian Branch:
32 Front St., West, Toronto, Canada.

CRESCENT
Make Good Belts Give Better Service
BELT FASTENERS

JOHN BOYLE, JR.
Attorney-at-Law
PATENT
Ouray Building,
Washington, D. C.

16 years on the examining corps of the United States Patent Office.

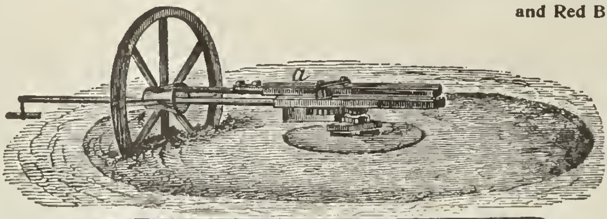


RED BRICK PRESS.

Philadelphia Brick Machine Works.

Fire and Red Brick Presses All Sizes. Machinists and Engineers.

Manufacturer of All Kinds of Machinery Used in the Manufacture of Fire and Red Brick.



These Tempering Machines can be driven either by Steam or Horse Power. The latest improvement requires less power to run than the old style Steam Gearing, and fitted up 10 per cent. cheaper.

☞ Send for Circular and Price List.

GEORGE CARNELL, 1819, 1821 and 1823 Germantown Ave. and Fifth St., PHILADELPHIA, PA.

"OHIO" ROLLED EDGE STEEL BRICK PALLET

Style No. 8. For Rack Cars
(Patented)

Made from No. 13, 14, 16 or 18 Gauge Steel. ⅝ inch Roll running full length and across ends. Either Galvanized or Black Steel. The lightest, strongest and most rigid Pallet made

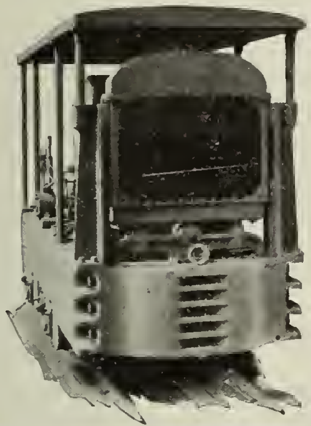
THE OHIO GALVANIZING AND MANUFACTURING CO., Niles, Ohio

Financial Assistance Given

Clay Product Manufacturers who desire increased output or larger equipment. I have sold many Clay Product Company Bonds, and have a large clientele for this class of securities.

Correspondence Invited

FRANKLIN W. MORGAN
Room 1219-38 So. Dearborn St. Chicago, Ill.



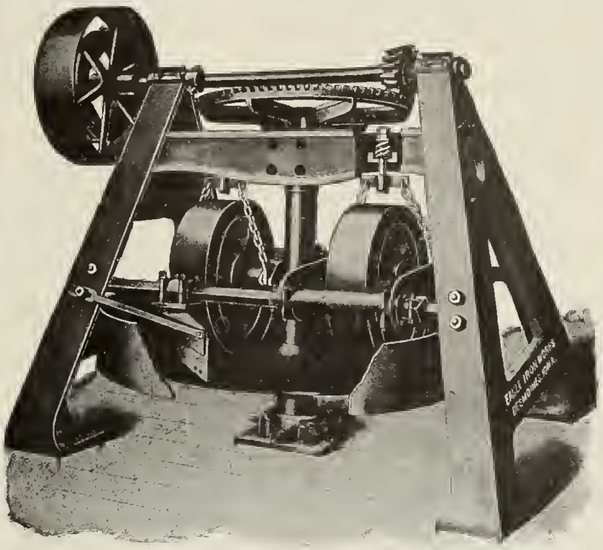
BURTON

Gasoline Locomotives
Sturdy haulage units built in 3½ and 6 Ton Sizes.
Hook up with a Burton and watch cost drop.

Burton Engineering & Machinery Co.
Cincinnati, Ohio

Independent and Suspended Mullers

the distinguishing feature of our **DRY PANS**



Other valuable features which our catalogue fully describes.

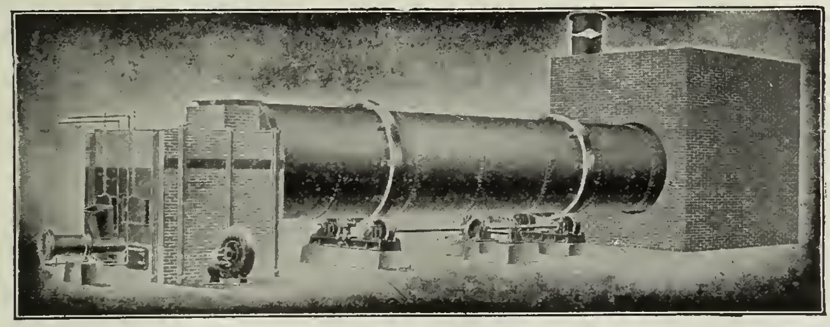
EAGLE IRON WORKS
Des Moines, Iowa

EAGLE "MIKADO" PENCIL No. 174

For sale at your dealers Made in five grades

Conceded to be the finest Pencil made for general use

EAGLE PENCIL COMPANY NEW YORK



ROTARY CLAY DRYER
"MATERIAL CARRIED IN STOCK FOR STANDARD SIZES."

DRY YOUR CLAY

AT LOW COST

YOU CAN THEN OPERATE IN ANY WEATHER OR SEASON

It Assures Uniform Product

YOU CAN THEN SCREEN TO ELIMINATE PEBBLES, ETC.

American Process Co.
68 Williams Street
NEW YORK

INVESTIGATE

The Minter System

IT burns cleaner than direct fired periodical kilns because the water-smoking is done with clean heat, and the kilns require only about 50% of the fuel usually required in fire holes. The per cent of dust, ashes, etc., is reduced in proportion to the amount of fuel required.

Investigate it from every angle—first cost, labor cost, fuel cost, production cost per 1000 capacity, flexibility, and all the way you will find the Minter System on the job ready to deliver the goods. *Write us for all details.*

FLINT RIVER BRICK CO.

ALBANY, GA.

We Can Save You Money, Time and Trouble on WIRES

Let us send you samples and prices.
Daily capacity, 20,000 finished wires.

The Mittler Wire Mfg. Co.

Robbins, Tenn.

ECONOMY True economy is the sure road to wealth today, just as it has ever been. This is generally conceded, but it is not always certain what constitutes true economy. In the clay line it is ofttimes real economy to replace small capacity machinery with larger in order to meet the demands of a rapidly growing trade. Really it is false economy not to do so, for one must spend money to make money. He is wise who recognizes this truth and promptly replaces outgrown machinery with that equal to his needs. Then, after you have done the wise thing in enlarging and refitting your plant, don't let the outgrown machinery go to the scrap pile. It may prove a boon to some manufacturer starting a small capacity plant for which it will be ample. There are many such and they may be reached through an ad in the For Sale columns of The Clay-Worker. Be wise, not wasteful, and instead of letting your outgrown machinery rust out, advertise it in The Clay-Worker (see forms of ads under heading "For Sale, Wanted, Etc.," in this issue) and convert it into ❧ ❧ ❧ ❧ ❧ **CASH**

To insure insertion in current issue, copy should be furnished early in the month.

Address

THE CLAY-WORKER,

Indianapolis.

A LABOR SAVING DEVICE

OUR ONE-MAN TRUCK—

the Invincible Truck—should be used on every sewer pipe plant in this country. Saves labor, time and trouble.

Adjustments are made in two minutes for changing to different size boards.

One man can handle 30-in. pipe with case

Positively no load on handles and no triggers on the lift.

TORONTO FOUNDRY & MACHINE CO.
Toronto, Ohio

BAIRD

POT MOLDING MACHINERY

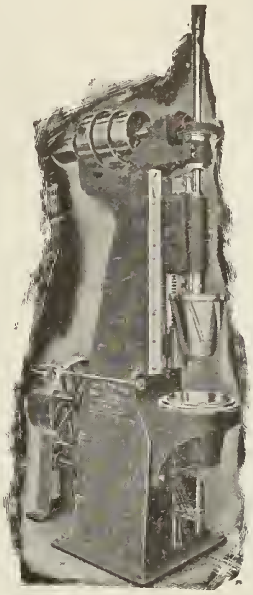
These Machines in Addition to the Manufacturing of Flower Pots Can Be Used for

Stone Ware Saggers
Crucibles Sleeves
Runner Brick Nozzles

We specialize machines for the Manufacture of Pottery and Guarantee every one we sell.

Write us for information

Baird
Machine & Mfg. Co.
409-11 Jefferson East.
Detroit, Mich.



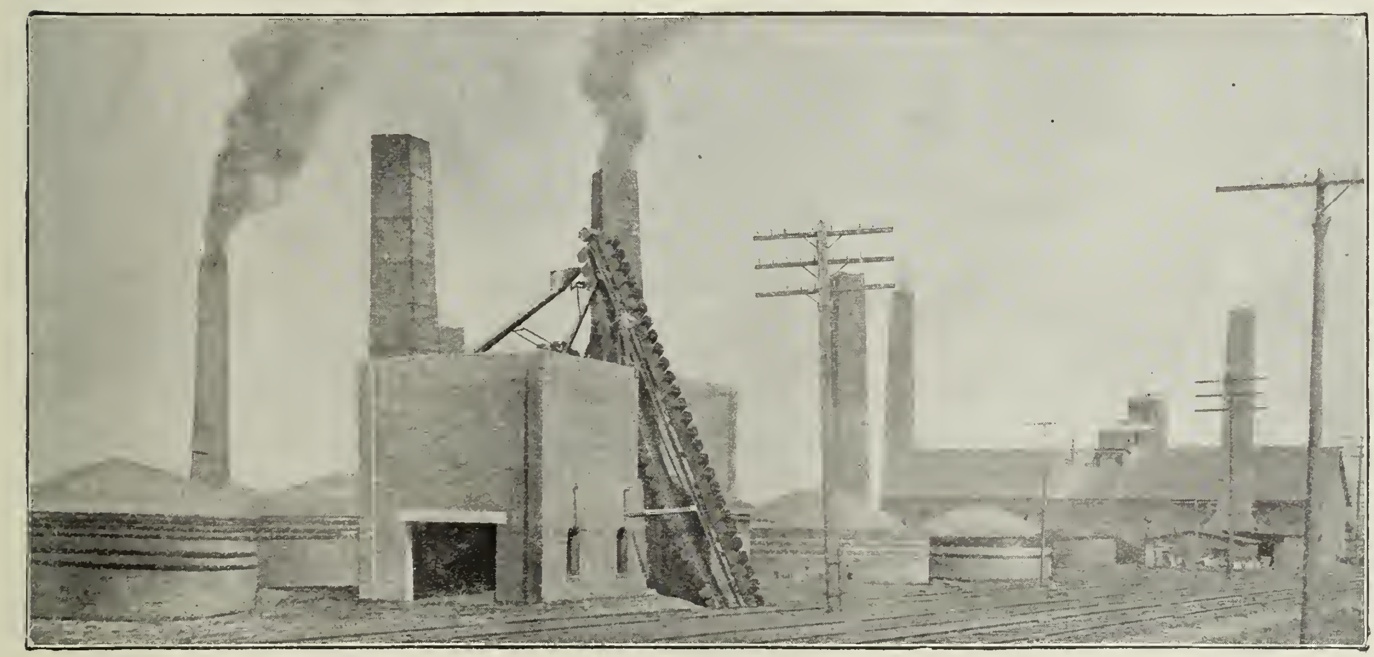
COLUMBUS Unloader Working in the Plant of MARTINSVILLE BRICK Company, Martinsville, Indiana

The facts in the accompanying letter are typical of COLUMBUS users.

Firms are standardizing on the COLUMBUS, because of their durability, efficiency and economy.

Gentlemen:
For your information, we wish to advise that your Coal Handling machinery has more than met our expectations as a Labor-saver.
We consider this equipment one of our most valuable assets, it being no trick at all to unload a large hopper in an hour—four cars having been elevated into our bin this morning.
Very truly yours,
Martinsville Brick Co.,
(Signed) E. I. Poston, President.

May we not have the opportunity of co-operating with you in solving your material-handling problems? Write us anyway.



THE COLUMBUS CONVEYOR COMPANY, COLUMBUS, OHIO

Rookwood Pottery

Cincinnati, Ohio

Artistic pottery and fine tile
for decorative uses

1880 Fortieth Anniversary 1920

Visitors to Cincinnati will be
Welcome at the pottery.

Hotel Pennsylvania, New York

The Largest Hotel in the World

Hotel Pennsylvania will be Official Headquarters during the convention of the National Brick Manufacturers Association and the Common Brick Manufacturers Association from January 31 to February 5.

Make your reservations early with the Reservation Department, Hotel Pennsylvania.

Operated in Connection with

HOTELS STATLER

BUFFALO DETROIT
CLEVELAND ST. LOUIS

BOOKS FOR CLAYWORKERS

These Books Will be Mailed, Postage Prepaid, to Any Address in the United States or Canada, on Receipt of Price.

Clays: Their Occurrence, Properties and Uses, by Heinrich Ries. Price $5.00.

A valuable and reliable treatise on the origin of clay, chemical and physical properties, kinds of clay, methods of mining and manufacture and distribution of clay in the United States, including a chapter devoted to Fuller's earth, its distribution in the United States, mining and uses, etc. The book is well illustrated, which adds much to its value.

The Effect of Heat Upon Clays, by Prof. A. V. Bleininger. Price $2.00.

A book of valuable information on burning and drying, told in a plain, practical way, and invaluable to the burner or superintendent.

Practical Farm Drainage, by C. G. Elliott. Price $1.50.

A Treatise on the Benefits of Farm Drainage, with plans and illustrations for making and laying tile.

Tables of Analyses of Clays, by Alfred Crossley. Third Edition. Price $2.00.

Including analyses of chemically pure clays, well-known common and pressed brick clays, paving brick clays, fire clays, shales, etc., both in this country and abroad. A valuable book for those desiring to compare their clays with well-known and standard clays.

Engineering for Land Drainage, by C. G. Elliott. Price $2.00.

Giving instructions for laying out and constructing drains for the improvement of agricultural lands, intended for the use of those who are charged with the responsibility of making plans for and executing drainage improvement.

Land Drainage, by J. L. Parsons. Price $1.50.

A treatise on the design and construction of open and closed drains.

Economies in Brickyard Construction and Operation, by Ellis Lovejoy, E. M. Price $1.00.

Points out economical methods for every department of the business. Is practical and covers the field thoroughly.

Drying Clay Wares, by Ellis Lovejoy, Author of Economies in Brickyard Construction and Operation, and Scumming and Efflorescence. Price $2.00.

This is a splendid treatise covering every phase in the drying of any kind of clay ware.

Scumming and Efflorescence, by Ellis Lovejoy, E. M. Price 50 Cents.

A book of authority, giving the cause and remedy of scum and efflorescence.

Tile Underdrainage, by J. J. W. Billingsley. Price 25 Cents.

A brief treatise on the benefits of farm drainage by the "Father" of farm drainage. This is an excellent pamphlet for distributing among tile users. In lots of 100, $4.00; in lots of 1,000, $30.00.

Vitrified Paving Brick, by H. A. Wheeler, E. M. Second Edition. Price $2.00.

A review of present practice of the manufacture, testing and uses of vitrified paving brick.

T. A. Randall & Co.

Indianapolis, Ind., U. S. A.

YES,

OUR MACHINERY DEPARTMENT is still leading in **Screens, Feeders and Elevators.** If we didn't make the best we wouldn't make any.

OUR APPARATUS DEPARTMENT continues to make the best **Draft Gages** for kilns and carries the best line of **Thermometers, Hygrometers and Anemometers** for dryers and kilns, made special to our order.

We also make **Automatic Counters and the Standard Rattlers.**

OUR DRYER AND KILN DEPARTMENT is the highest authority on **Dryers, Continuous Kilns, Forced=Draft Furnaces and Gas Producers.**

OUR ENGINEERING DEPARTMENT investigates manufacturing propositions, tests clays, corrects faults of manufacture and uneconomical methods, makes appraisals, etc. **Our new Plants** are the last word in economical production.

The Ceramic Engineering Co.

2782 North High St. Columbus, Ohio

SAVE

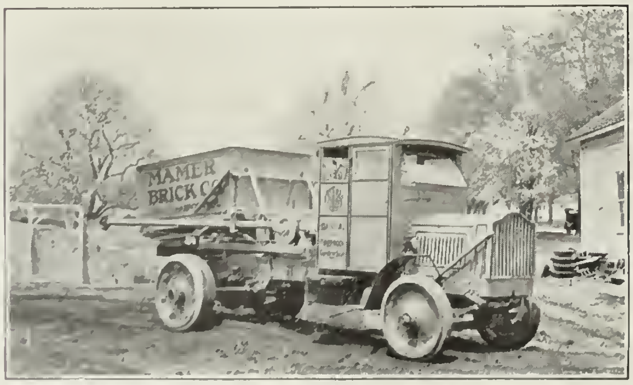
The Fontaine Demountable Bodies

$20.00 TO $45.00

Delivers Brick in Neat Manner Without Any

Loading Demountable Body From Freight Car.

Truck Load of Brick on Way to Job, Atlantic City, N. J.



Truck and Body Used by Mamer Bros, Benton Harbor, Mich.

REDUCES LABOR COST

Makes one truck do
the work of two

WHAT USERS SAY:

"Our truck, with your 1,000-brick body, has taken the place of four teams. The Fontaine Body is especially adapted for handling FACE BRICK, not only cheaper, but brick are delivered in a perfect condition, none broken, cracked or even chipped."

"Our two trucks, equipped with Fontaine Bodies, deliver more brick than ten mule teams. One type, 'F,' or 1,000-brick capacity outfit, delivers 11,000 brick per day on a five-mile haul, whereas five mule teams deliver only 10,000 brick on same haul."

"During a test in St. Louis our 2,000-brick outfit delivered more brick than eight teams in the same time, and delivered all of them in perfect condition, just as they came from kiln."

The Somers Brick Co., Atlantic City, N. J., have ordered their second outfit. They say:

"The truck and bodies are now operating from Bakersville, making four trips per day, with a total mileage of 95 miles, carrying 2,500 brick per load. On account of the 40 per cent. increase in freight rates, we are considering hauling all our brick from Bakersville by this means."

Send for our handsome two-colored circular, with 15 illustrations, recommendations, description and specification. **Copy free upon request.**

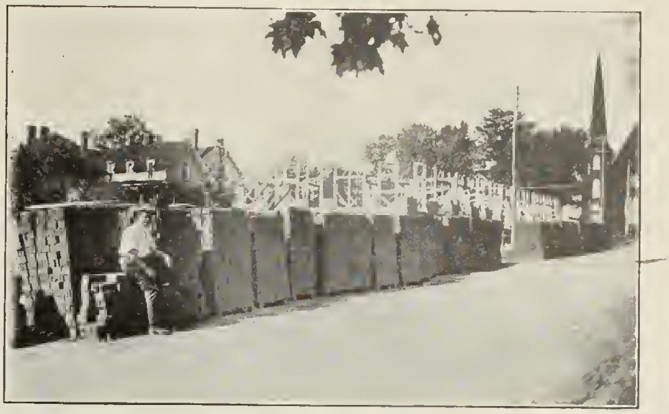
For Handling Brick

PER DAY

Breaking or Chipping →

READ

↓ What this satisfied user has to say.



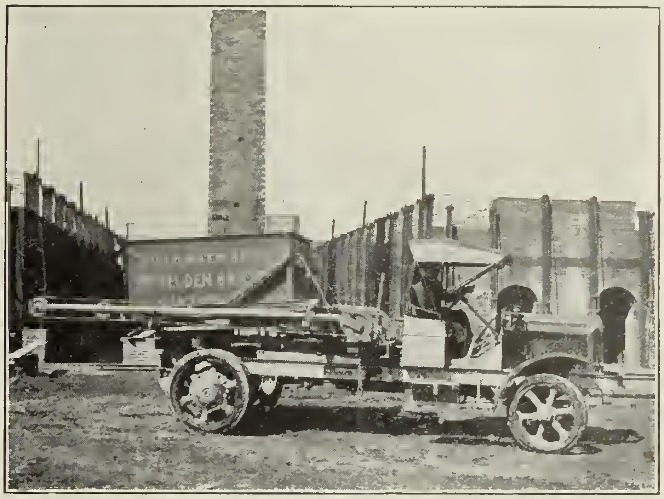
Sixty thousand Brick delivered without one Broken or Chipped

THE BELDEN BRICK COMPANY
Makers of Clay Products
Canton, Ohio., Sept. 13, 1920.

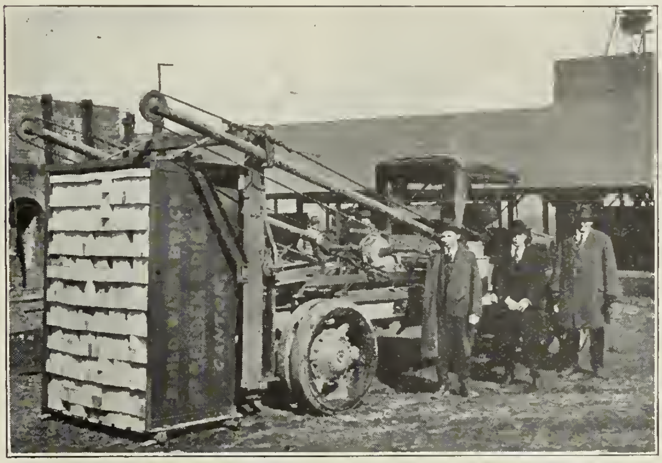
American Truck Body Co., Inc.,
Martinsville, Va.
Gentlemen:

After using your Type "FF" "FONTAINE DEMOUNTABLE BRICK BODY" for the past six months will say, it has met our requirements in every respect. We were just talking the other day had it not been for our "DEMOUNTABLE SYSTEM" we would have been up against it on deliveries as we have made several trips from our Port Washington Plant, a distance of 50 miles. By doing this we were able to keep the jobs going when we could not get cars. Hardly a week passes that we do not have an inquiry from someone asking how our equipment is working. We assure you that it gives us great pleasure to recommend this equipment. The writer would be very glad to show your Type "FF" under working conditions to any prospective customer you might wish to send here, as it is working every day and stacking "FACE BRICK" in a perfect manner.

Wishing you success, we remain,
Yours very truly,
THE BELDEN BRICK CO.,
H. G. MOORE,
Superintendent.
M:H



Truck and Body Used by Belden Brick Co., Canton, Ohio.



Note the Neatness and Compactness of Brick Unit.

The Fontaine Demountable Bodies for handling brick and other materials is the **GREATEST LABOR-SAVING EQUIPMENT** on the market, and every day you delay buying you lose from $20.00 to $45.00 per day.

American Truck Body Company Inc.

Martinsville, Virginia

ELLIS LOVEJOY, E. M.
CONSULTING ENGINEER
The Clay and Refractory Industries
Mail Address, 480 W. Sixth Ave.
Laboratory, 1538 N. High St.
COLUMBUS, OHIO

Thirty-three years' experience in the manufacture of clay wares and in engineering work.

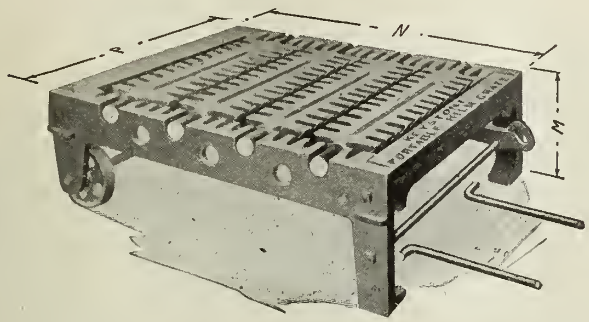
Geological Examination of Properties.
Tests of Clays.

Reports on the Possibilities of Clay Projects.
Investigations of Factory Operations.
Development of Products.

Plans and Specifications for New Factories.
Improvements in Kilns and Dryers.
Modernizing Old Factories.
Appraisals of Properties and Factories.

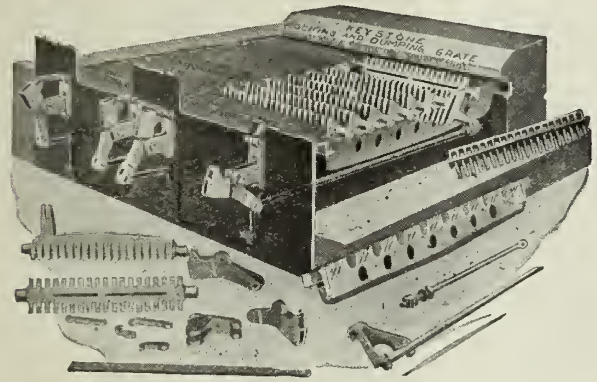
MARION LEADERS

Save Labor, Time and Trouble, and give you better working conditions, with greater production.



Keystone Portable Kiln Grate.

The superiority of the Shaking Grate over the stationary type is firmly established. Send for positive proof.


KEYSTONE SHAKING AND DUMPING GRATE

This Grate is especially adapted for low burning, "clinkering" Coal, especially slack or screenings —it burns them so effectually that it makes them give a full day's run without cleaning through fire doors. Its working principle is such that the fireman can handle and control his fires WITHOUT THE USE OF SLICE BAR OR POKER.

You Need Our Wire Twister

Because you cannot get the same results without it. Not only twists the wire better, making the loop stronger than when done by hand, but does it so quickly, it soon pays for itself in TIME alone Will ship anywhere on approval, charges prepaid Place your order with us now. Price, $10.00 f.o.b. Marion, subject to return if not satisfactory,

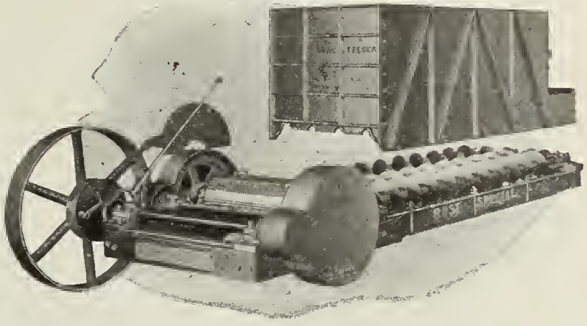
Alexander Patent Water Gauge

$1.75 **$1.75**

You can end your water gauge troubles by putting this on your boilers. All for $1.75.

Subject to return if not satisfied.

"Rust" Special Clay Feeder and Mixer



This machine is built so strong you can dump several carloads of clay on top of the machine and it will operate automatically, needing no further attention. It merits investigation.

Marion Machine, Foundry and Supply Company

P. O. Box 156 **Marion, Indiana**

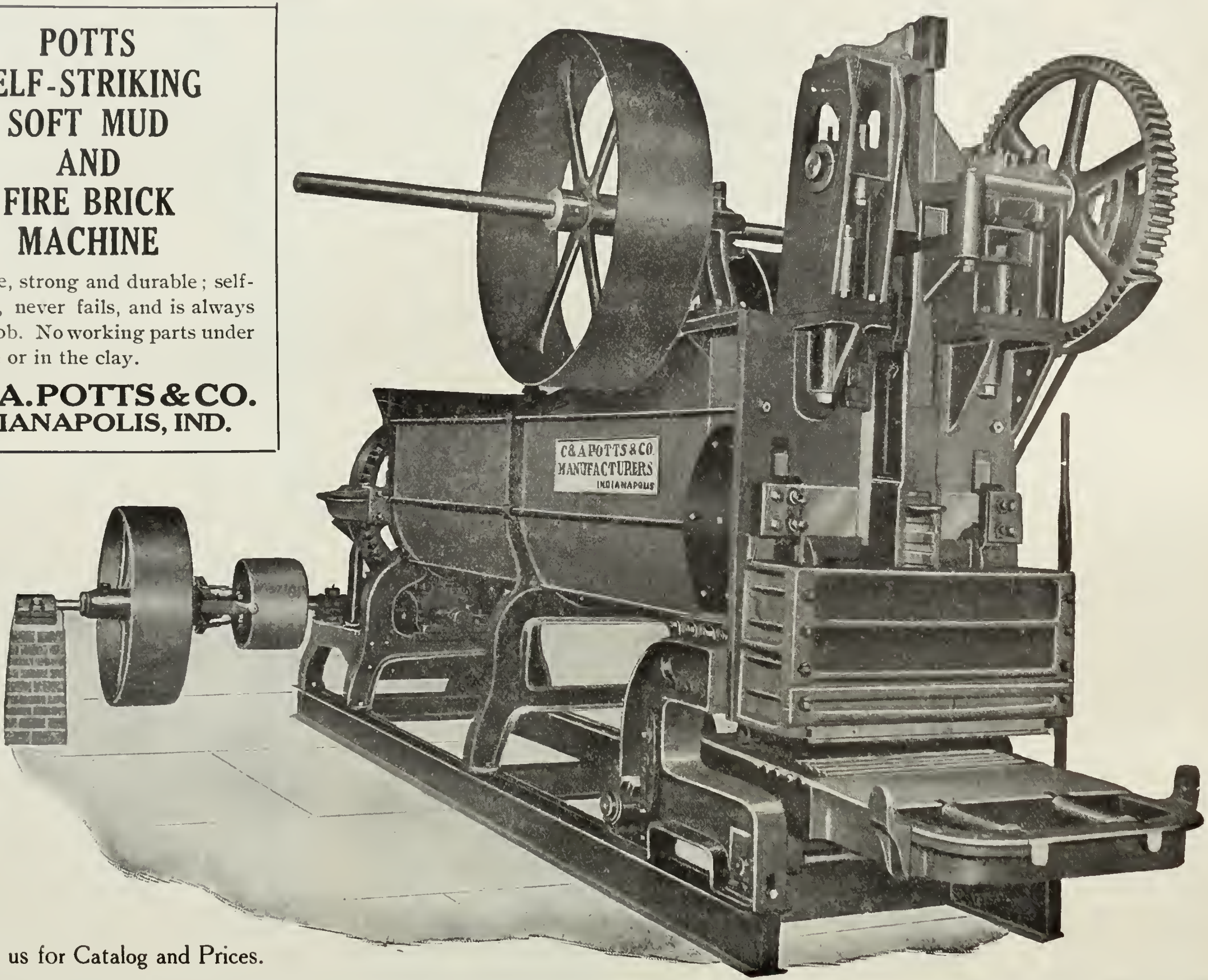
DO YOU NEED?
- Soot Blowers
- Shear Klean Grates
- Marion Scottdale Grates
- Portable Kiln Grates
- Alexander Patent Water Gauge
- Marion Power Plant Equipment

Write us.

POTTS
SELF-STRIKING
SOFT MUD
AND
FIRE BRICK
MACHINE

Simple, strong and durable; self-striking, never fails, and is always on the job. No working parts under machine or in the clay.

C. & A. POTTS & CO.
INDIANAPOLIS, IND.



Write us for Catalog and Prices.

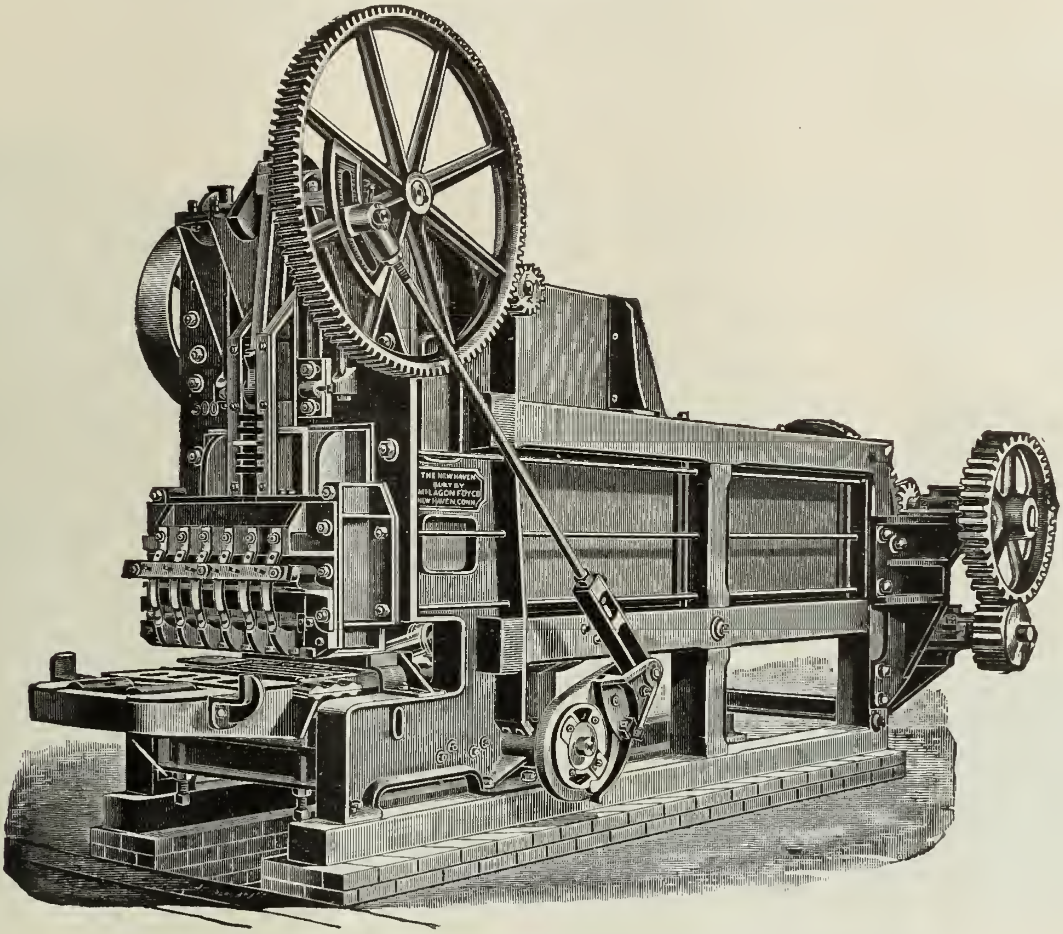
OUR PRODUCTS HAVE QUALITY—WE BACK UP OUR EQUIPMENT WITH A GUARANTEE—PRICES RIGHT.

Soft Clay Brick Machines

Are the only kind we build, and it's our aim to build them well. They are the reliable kind, with great strength just where it is more required.

Stout shafts, long bearings, large oil holes, strong gears, steel liners and other details in proportion. They are the kind

THAT DON'T BREAK DOWN EVERY DAY



"NEW HAVEN" HORIZONTAL BRICK MACHINE.

"New Haven" Brick Machines

Came into existence some thirty years ago, and they came to stay. They have staid so well and are so well liked at home that three-fourths of all the brick made in New England are the product of **"NEW HAVEN" MACHINES.** They excel everything and

FOR HARD SERVICE ARE SURE TO SATISFY

Where others fail. That is the reason all our machines are standing advertisements and why all our patrons recommend them. Such machines are worth investigating.

The EASTERN MACHINERY CO.

NEW HAVEN, CONN.

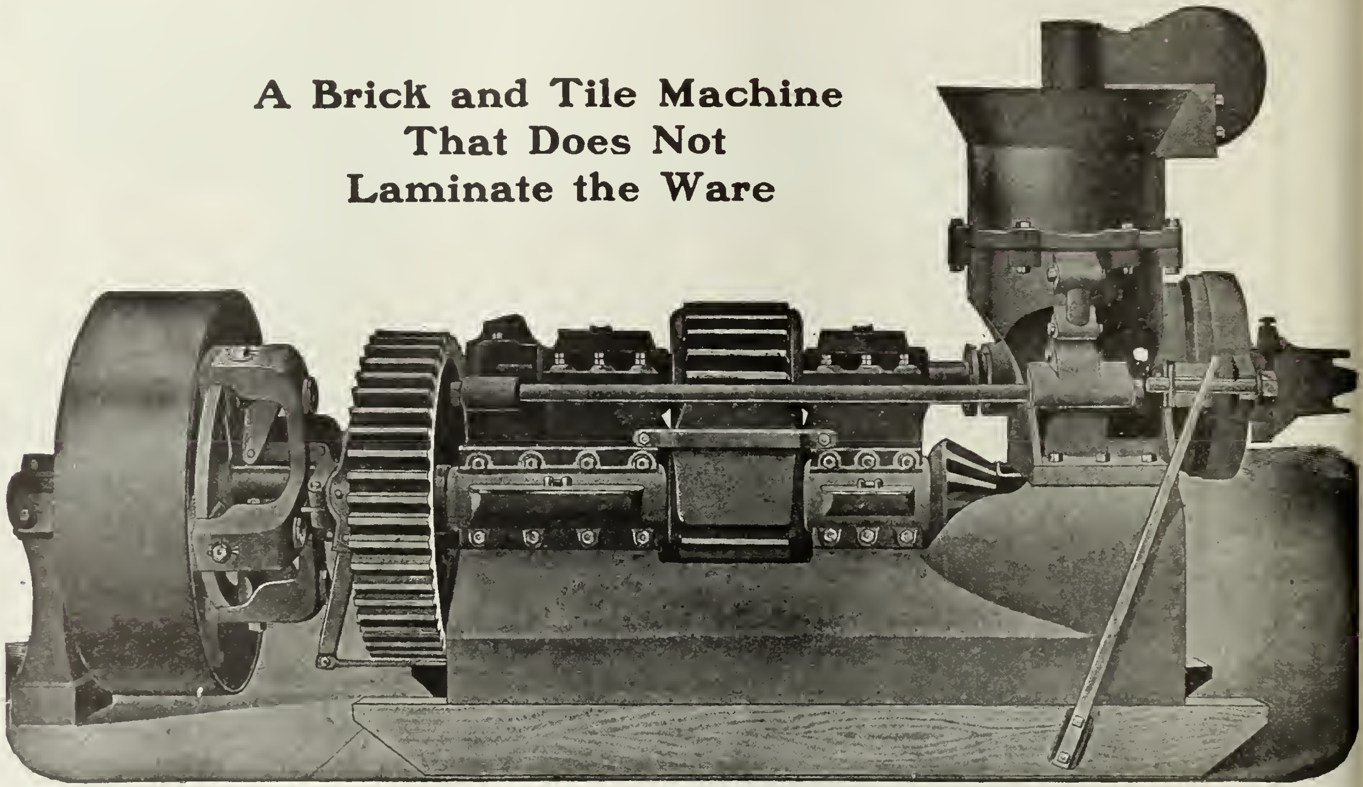
TURN FAILURE INTO SUCCESS

With the Wonder Machine

A Machine of Large Capacity. Unequaled in Record of Durability

---

**A Brick and Tile Machine
That Does Not
Laminate the Ware**



The Big Wonder Brick and Tile Machine

We also make Side-Cut Brick Cutters, Clay Crushers, Dry Pans, Disintegrators, Pug Mills, Granulators and Corrugated and Smooth Roll Crushers.

Write for Catalog and Prices.

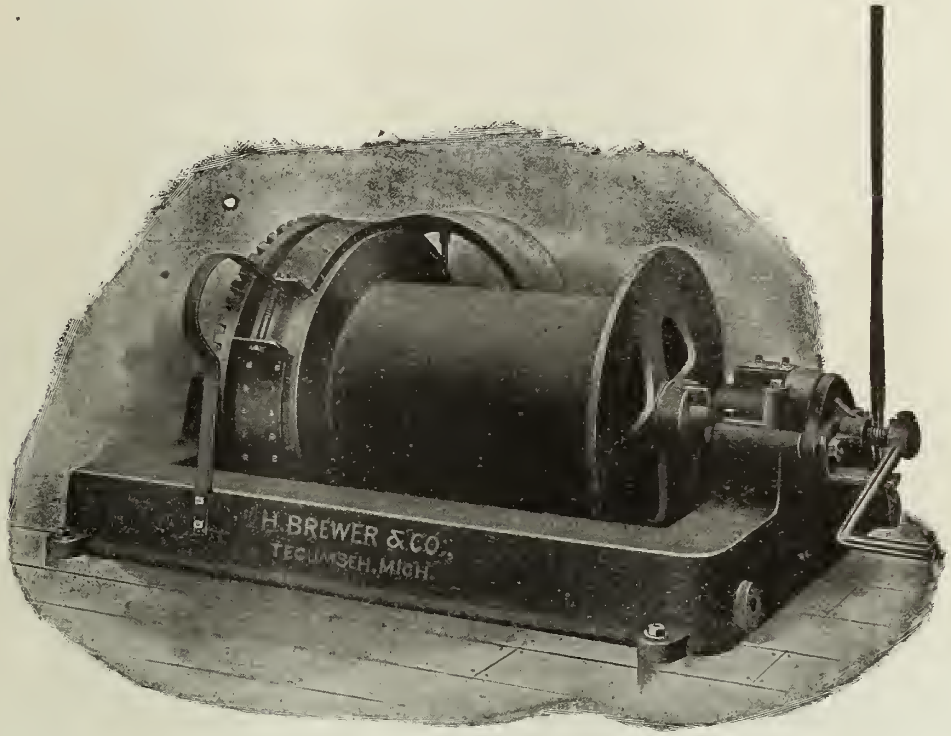
THE WALLACE MFG. CO.

FRANKFORT, IND.

IF MARKED BREWER IT'S GOOD

HOISTS

You can buy a Brewer Hoist without buying trouble with it. It will keep on hoisting without any coaxing. We have spur-geared hoists, bevel-geared hoists, spur-friction hoists and bevel-friction hoists. Large ones and small ones and all of them **good.**



This is a Heavy Bevel-Geared Pattern

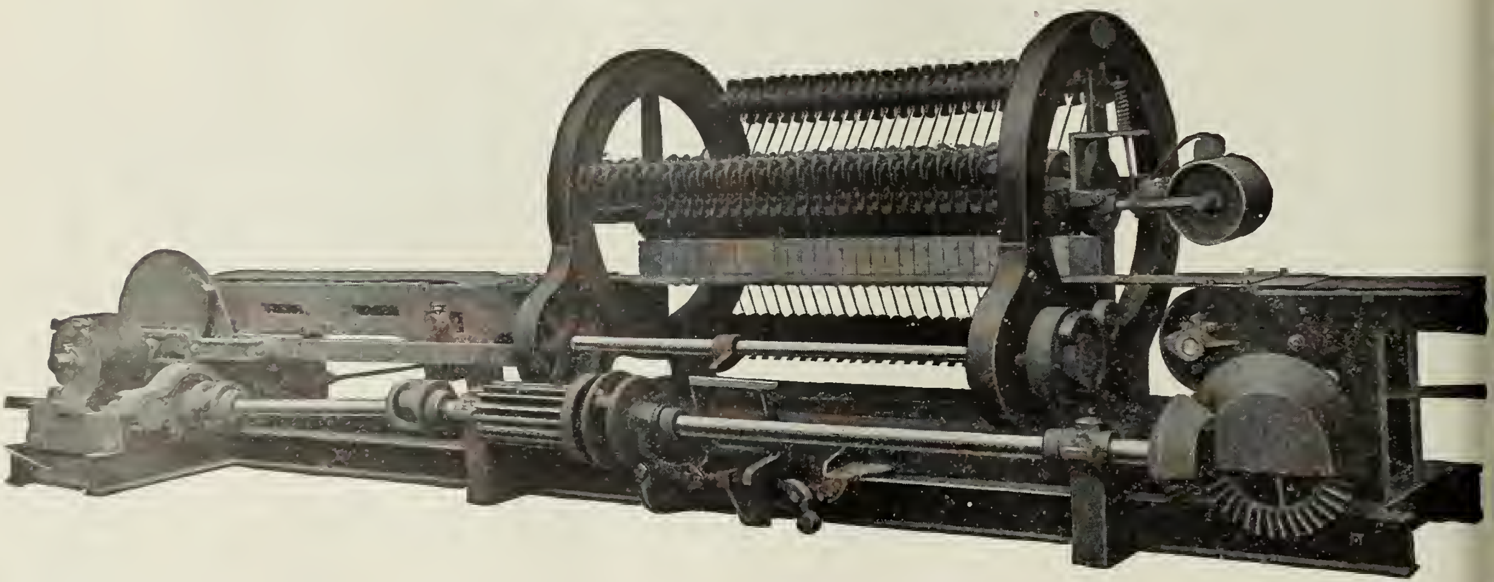
It is No. 28. It weighs 3,000 pounds. The drum is 20 in. diameter, 28 in. between flanges and the flanges are 30 in. diameter. The journals are self-oiling, the gears 4 in. face, the brake band 5 in. wide. Can be made right or left hand. Illustration above is left hand. It is enough of a hoist for the biggest plants, and we have smaller ones for the others.

If you ask for our catalog you will get it

H. BREWER & COMPANY, Tecumseh, Mich.

YOU USUALLY GET WHAT YOU PAY FOR

This is as true of an automatic cutter as it is of an automobile. Without the Automatic Clay Column Reliever and the Cam-Controlled Carriage-Moving Mechanism, the Freese Cutter could be built and sold at a lower price, but it is these, and other exclusive features, that make the Freese Cutter so sure-acting and dependable—and so thoroughly satisfactory to several hundred users.



Freese Rotating Automatic Cutter

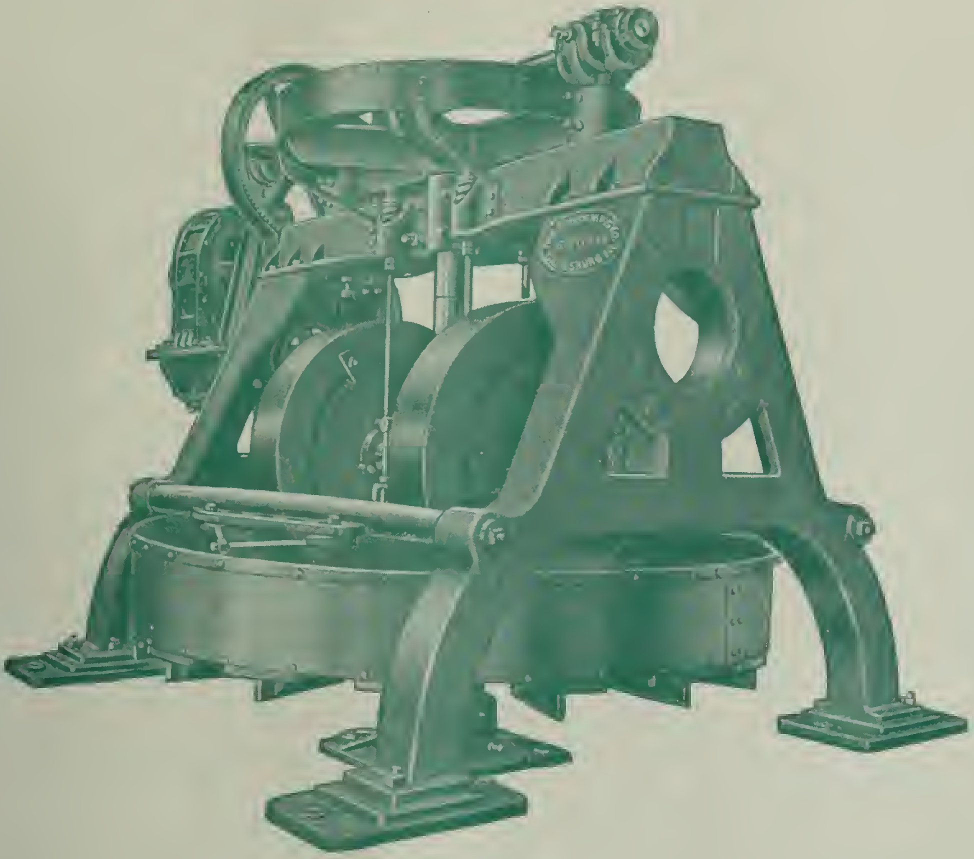
E. M. FREESE & COMPANY

Galion, Ohio

DEPENDABLE MACHINERY OF PROVEN EFFICIENCY

FOR SIXTY-FIVE YEARS

the name FROST has stood for all that is best in Power Plant Equipment, Clay Crushing and Mixing Machinery



We are particularly proud of the splendid services our products guarantee. And especially is this true of our 8 and 9 foot Dry Pans, which are built on honor and made to last.

Ours is recognized as

THE STANDARD PAN

and has been since we made the first one many years ago.

SOME OF OUR PRODUCTS

Dry Pans, Wet Pans, Sand Mills, Chaser Mills, Brick Rattlers, Automatic Side-Crank Engines, Automatic Center Crank Engines, Automatic Enclosed Engines for belt or direct connected service, Throttling Side and Center Crank Engines, Throttling Twin Engines, Horizontal Return Tubular Boilers, other various type boilers, Rocking and Dumping Grates, Open or Closed Feed Water Heaters, Pressure Tanks, Air Receivers, Stack and Plate work, Complete Power Equipment.

SEND FOR DESCRIPTIVE BULLETINS, ILLUSTRATING AND GIVING FULL DETAILS OF OUR PRODUCTS.

The Frost Manufacturing Co.

Works at
GALESBURG, ILL.

Sales Department
112 West Adams St., CHICAGO, ILL.
Cable Address, "FROSTMANCO," Chicago

Mention The Clay-Worker.

PLYMOUTH

Gasoline Locomotives

PIONEERS IN DEVELOPMENT | **PACEMAKERS IN PRODUCTION** | **COLOR BEARERS IN SERVICE**

Superlative In Type and Service

After a continued use of the PLYMOUTH GASOLINE LOCOMOTIVE, the Claycraft Brick Company of Columbus, Ohio, wrote:

"We have convinced ourselves that the gasoline locomotive is by far the best machine for our use and that the Plymouth can not be beaten by any other make."

The Claycraft people also wrote that by the use of the Plymouth the cost of manufacture and storage of brick had been reduced sufficiently to pay for the Plymouth and cars in a single year.

Why not make the Plymouth the labor saving and cost saving link between your pit and mill? Write for our special Brick and Clay Bulletin.

THE FATE-ROOT-HEATH COMPANY

Riggs Avenue **PLYMOUTH, OHIO**

Fate

CLAY-WORKING MACHINERY

Honor Built For The Ages

WE ARE PROUD OF THE REPLIES WE RECEIVED

In answer to our letters to purchasers of Fate Clayworking Machinery. The letters asked point blank, regardless of how much it would hurt, for a true statement of what each purchaser thought of our product.

And the replies make us more than ever certain that our product justly deserves the strong guarantee we put upon every machine sold.

Fate products have been leaders for over a quarter of a century—Leaders by virtue of quality and improvements in keeping with progress.

30,000 to 50,000

Standard Size Brick

EVERY TEN HOURS WITH A "Special Imperial"

The Combined Brick and Tile Machine

Specially designed for making BRICK, DRAIN TILE and BUILDING TILE, by the use of augers designed for the work.

Machine has most thorough pugging device known—double shafts, bearing knives that revolve toward each other and interwork, making a forced feed to the augers.

All bearings on the outside of pugging tub and are entirely free from contact with action of clay

The "Special Imperial" is most strongly built, and includes all the latest improvements to increase efficiency.

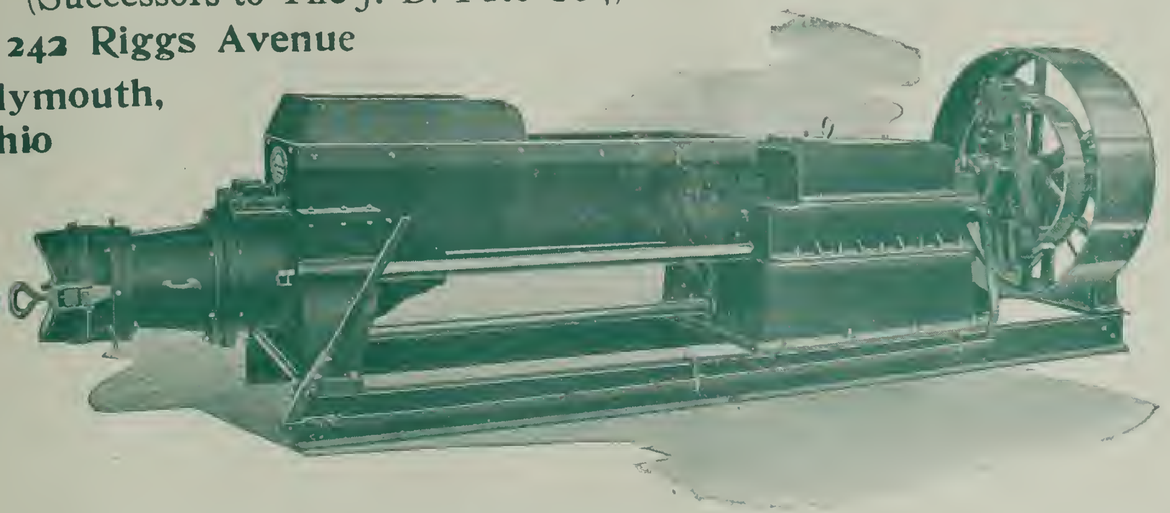
Send for our catalog of clayworking machinery.

The Fate=Root=Heath Co.,

(Successors to The J. D. Fate Co.,)

242 Riggs Avenue

Plymouth,
Ohio



"Proctor" DRYERS

for CLAY PRODUCTS, POTTERY and GENERAL WARE

All of the "Proctor" Dryers are manufactured in the modern plant shown above. Every effort is made to increase the efficiency of the workmen by surrounding them with up-to-date machinery, and the best working conditions.

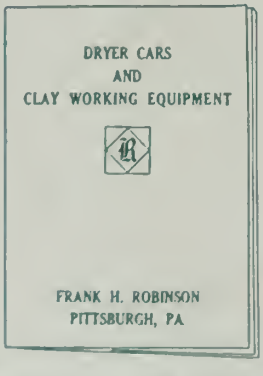
The superiority of this, the largest and most up-to-the-minute drying machinery plant, is reflected in each and every dryer which bears the name of "Proctor".

PROCTOR & SCHWARTZ, INC. **7th & TABOR RD.**
PHILADELPHIA, PENNA.
Branches New York Providence, Chicago Pittsburgh, Charlotte, Hamilton, Ont., Can.

Catalog No. 12, now ready for distribution, tells all about the ROBINSON LAKEWOOD LINE of Dryer Cars, Transfers, Clay and Coal Cars, and other clayworking equipment.

Ask for your copy.

Frank H. Robinson,
General Offices, Fulton Bldg.
Pittsburgh, Pa.



DRYER CARS
AND
CLAY WORKING EQUIPMENT

FRANK H. ROBINSON
PITTSBURGH, PA

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